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MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

AIR RAIL PROPOSALS FOR LONDON

See Page 3

VOL. LXXVIII No. 2027 [Registered at the G.P.O. as a newspaper] LONDON, FEBRUARY 1, 1958 PRICE NINEPENCE

Facing Facts

IN a trenchant straightforward speech, of a sort one rarely hears in the Commons these days, Mr. Thorneycroft explains the causes and principle underlying his recent resignation. He appeals for a halt to the drift of the last 12 years, "during which we have been attempting to do more than our resources could manage," and for a stiffening of Government policy which had been lamentably weak. "There is an England," he says, "which is ready to stand and fight now against inflation. There are millions of ordinary people willing to face the truth, however hard it may be." The country can ill afford to lose a strong Chancellor of the Exchequer at this juncture, but Mr. Thorneycroft's resignation will not have been in vain if at last the country is persuaded of the dangers confronting it. Surely the Government must now grasp the nettle. The Transport Commission has had no alternative but to reject for a second time the demands of the three railway unions for higher pay and shorter hours; these will now go before the Railway Staff National Tribunal for arbitrament. The N.U.R. and T.S.S.A. are not at present pressing for shorter hours. Sir John Benstead and his colleagues last week told the union leaders that British Railways simply could not afford at this time to pay increased wages, a fact of which they must already have been well aware. He pointed out—as we suggested several weeks ago—that a further rise in labour costs could be met only by such measures as reducing uneconomical services retained pending modernisation; this would create some unemployment. Moreover, another rise in rates and fares would mean the loss of yet more traffic. The position is critical. B.T.C. accounts for 1957 may well show a deficit of some £50 million, due mainly to interest and general charges, which will be covered by Government loans against the Consolidated Fund. Apart from this, the accumulated deficit is more than £70 million.

Setback for London Busmen

ALTHOUGH the Minister of Labour's refusal to countenance a special investigation of the London busmen's economic position was somewhat clumsily done it may be taken as a further proof of Government determination to pursue a policy of retrenchment and to avoid any action which might lead to a rise in costs whether coupled or not with leapfrogging of provincial and metropolitan workers in this industry, already hard pressed economically so that any lift in wages must mean increased fares and a rise in the cost of living. The London men represented by the Transport and General Workers' Union sought an increase of 25s. a week which the London Transport Executive turned down on economic grounds. In the circumstances the Government could do little else than refer the union to the normal process of arbitration of which its members have so far refused to take advantage. However, there must be some doubt whether any good would result from the Ministers' suggestion of a more general inquiry into the wages situation in the whole of the road passenger transport industry. London and the other cities have their peculiar problems, no less than interurban or purely rural operation. Negotiations outside London, where the busmen hold a position of particular importance in their union, are with municipal operators, with the 74 large B.E.T. and Tilling companies (some units of which negotiate with the National Union of Railwaymen) and the independent bus and coach proprietors. The union suggestion of an inquiry into London busmen's wages was a means of deterring hotheads and malcontents whom the T.G.W.U. executive may now have difficulty in restraining. On Tuesday Mr. Frank Cousins protested to Mr. Iain Macleod, Minister of Labour; Mr. H. R. Nicholas, assistant secretary of the union, had persuaded delegates to accept the proposal which was first put forward on January 10 at a meeting with Sir Wilfred Neden (who was not its author) at the Ministry. The delay in refuting it until January 25, after Mr. Macleod had consulted members of the Government was unfortunate.

CURRENT TOPICS

Motor Industry Recovery

PRELIMINARY figures for 1957 of motor industry production and exports just published by the Society of Motor Manufacturers and Traders, confirm the earlier indications of a remarkable recovery from the recession of last winter, though both production and exports of commercial vehicles were still below the figures for 1956. Total output was 1,150,000, 150,000 more than in 1956, while exports established a new record of almost 550,000 vehicles, beating the previous record of 1950 by 6,700. Another all-time record was established in exporting 115,000 agricultural tractors during 1957, which brought in roundly £60 million of the stupendous sum of £447 million earned during the year by the total exports of the industry. Commercial vehicle production was 289,976 compared with 298,609 in 1956 and 123,283, or 3,000 fewer, were exported during 1957, though the value of commercial vehicle exports rose by nearly £1¼ million. Commenting on the results, S.M.M.T. president, Mr. A. S. Dick, said that the recovery was complete and all the present indications were that the upward trend would continue.

Swiss Motor Show

GREATER importance than usual is attached to the Swiss Motor Show this year, which is to be held in Geneva from March 13 to 23, due to the coincidence of the spring session of the Bureau Permanent International des Constructeurs d'Automobiles, organised in that city by the Swiss Chambre Syndicale de l'Automobile. The meetings of this international body, which has its permanent secretariat in Paris and has for its president Colonel A. C. R. Waite, who is also a director of the Austin Motor Co., Limited, will draw representatives of manufacturers and the motor industry generally from all over the world to Geneva. Unfortunately, it seems unlikely, if the practice of earlier years is maintained, that they will see any of the products of the British heavy-vehicle industry except perhaps one make. The commercial vehicle section of the Geneva Show also assumes greater stature this year due to an allocation of additional space made possible by extension and the fact that it is the first commercial vehicle exhibition of 1958, the Belgian Show having given way to preparations for the Brussels World Fair and the Netherlands Show, in its postwar biennial arrangement, this year being for cars only. The Geneva Motor Show, the 28th in the series, will follow tradition in being officially opened on March 13 by the President of the Swiss Confederation, Mr. Thomas Hollenstein, who is also head of the Federal Department of Economics.

Life and Death of an Irish Railway

MANY Irish railways had unusual careers, but that of the Dundalk, Newry and Greenore was outstanding. Although comprising only 26¾ route-miles it was part of a through route from London to Belfast and Londonderry. It became in fact owned by the English London and North Western Railway, although of 5 ft. 3 in. gauge, and locomotives and rolling stock of that gauge were built at Crewe and Wolverton by the L.N.W.R. for its use. Born in an era of acute competition for Anglo-Irish traffic it had difficulty, as did the associated Holyhead—Greenore steamer service, in justifying itself economically. However rosy its prospects might have been between its public opening on May 1, 1873, and the outbreak of war in 1914, partition made its position difficult and after the 1939-45 war a continued decline in traffic brought about its closure, as a result of the B.T.C. deciding no longer to make good the losses sustained by the Great Northern Railway of Ireland which had operated the D.N. and G. from July 1, 1933. Railway and steamer service ceased on December 31, 1951, but the winding-up process took another six years, being a matter of unusual difficulty, involving as it did, Governments with different railway abandonment procedure. Mr. D. S. M. Barrie has produced a most attractive illustrated history of the concern (Oakwood Press, 12s. 6d.); it has a foreword by Mr. Edgar Hunt, last chairman. We are taken most readably through the complexities of the origins and termination of the railway undertaking, its motive power and carriages, the vicissitudes, disasters and triumphs of the associated steamer service, and all sorts of entertaining sidelines and side issues, including the remarkable affair of Mrs. McKivron's goats. There is no mention of the late nineteenth-century proposal to mix the gauge and couple it with a series of 3-ft. lines running to the Clogher Valley, the Cavan and Leitrim and across the bogs to the wilds of Connemara, but the author has omitted the will-o'-the-wisps and kept to the hard facts.

Work Study in Transport

BRITAIN'S transport industry had not advanced as far as the manufacturing industries in applying work study to obtain high performance, said Mr. R. J. Clarke, of Production Engineering, Limited, industrial consultants, when he addressed the Northern Ireland section of the Institute of Transport in Belfast. While valuable pioneer work was being done by the British Transport Commission and some transport authorities, and some incentive schemes for workers had been introduced, progress was slow. Among the reasons for this was that the major function of the industry was to operate and not manufacture and so manufacturing techniques were not easily applicable. Until now the biggest field for results had been in vehicle maintenance. The application of incentives in workshops showed reductions of overhaul times to half the previous values. Work study could be applied to general freight work, but owing to its variety, job standards were more difficult to determine; that was all the more reason to try, for an incentive encouraged a driver to try to eliminate hold-ups at a customer's premises.

LEADING FEATURES IN THIS ISSUE

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The late Roger W. Sewill, C.B.E., M.A. 9

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Design in Transport

AS proof of a belief that good design must play a vital part in modernisation, the British Transport Commission in 1956 appointed a Design Panel to advise on the best means of attaining a high standard of appearance and amenity in equipment used by passengers, customers and staff, or is permanently visible to them or to the general public. The work of the panel, of which Mr. T. H. Summerson is the chairman, was reviewed in a recent paper to the Design and Industries Association by Mr. George Williams, the Commission's design officer. The panel, he said, did not concern itself with the architectural design of building structures but would advise on the appearance and amenity of design and equipment, including certain items produced in quantity to standard designs and closely linked with the architectural side of buildings. The Commission actively supported the policy of making the most effective use of professional designers and consultants, and although the Design Panel was just a year old a good deal of progress had been made in this direction. Many short-term design projects were now being carried out through close collaboration between consultants and the engineering and design staffs of British Railways and contractors, and in other divisions of the organisation. The employment of consultant designers by the railways, as in the case of industrial concerns in this country, was a relatively new idea, though not uncommon in America.

Its Application Today

IN the locomotive field, Mr. Williams stated, the work of the Design Panel was concerned with the appearance (including the shaping of the leading end) of two different types of electric locomotive and three main types of diesel-electric and diesel-hydraulic locomotives of from 800 to 2,300 h.p. and numbering 14 in all. The panel was also currently concerned with five types of suburban train and two entirely new trains now under development, comprising an electric suburban train and a luxury diesel express Pullman train. It also had under constant review the colour and general livery of locomotives and trains as a whole, including such things as seating, lighting and ventilation. He thought that the open type of carriage with comfortable seating, and as spacious as operating requirements would allow, was likely to become more popular. A layout with reclining seats could be a good substitute for the sleeping-car, except where very long journeys were involved. The panel and its consultants are also at the moment engaged on the design and decoration of the public accommodation on new ships and upon a suggested improved design for a British Railways road vehicle, and much work is in hand for the hotels and catering services of the Commission. Mr. Williams said that the panel's longer-term intention is to keep pace with engineering development and, by encouraging collaboration between engineering and design, operation and service staffs and design consultants, to create a good and recognisable design policy.

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BRITISH RAILWAYS

MODERN TRANSPORT

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Little Suns and Moons

PROFOUND changes in the shapes and scope of transport vehicles of the future and in their means of propulsion might well have their roots in two outstanding achievements of recent months and though all the rest of mankind's activities during the nineteen-fifties fade into obscurity—and many will be better forgotten—this decade will be remembered, perhaps as long as man exists, for the launching of the first earth satellites and for the first significant advance in harnessing the potential energy of the thermonuclear reaction. With powered flight barely more than 50 years old, a half-century that began with halting hops of a few hundred yards at about the pace of a good horse has ended with ocean-spanning transports flying at speeds approaching 500 miles an hour so much a commonplace that more than one million passengers crossed the Atlantic by air last year. During the last ten of these fifty years, the pace of development has quickened at a rate almost to outstrip the ability of the average man to comprehend. The cruising speeds of normal transport aircraft have been raised from 200 m.p.h. or so to around 400 m.p.h. in British turbine-powered machines now in airline service and will be 600 m.p.h. or more in the next generation of American and British transports.

Payload by Rocket

DURING the same decade, the art or science of rocketry, put forward earlier for conveyance of mails, and picked up by others where the Germans left off at the close of the war, has been advanced to the point where mighty engines can project a payload—albeit in the present climate of international relations a thermonuclear warhead—of several tons over a distance of 5,000 miles at speeds of thousands of miles an hour. Aided by modern calculating engines or computers and electronic control and guidance equipment, the rocket can be aimed and directed on its course with a reasonable degree of certainty that it will arrive at its intended destination. Who can say what effect the result of these warlike preparations might have on international transport and communications if ever the mutual fear and mistrust among nations give way to a spirit of mutual co-operation and endeavour? Even without this co-operation, progress along more peaceful lines has been spectacular, culminating last October 4 in the Russians launching their Sputnik and placing it in orbit round the earth to signal back valuable information to add to man's store of knowledge of the universe. The even larger Sputnik II was soon to follow, this time carrying a living warm-blooded creature into inter-lunar space which, if reports are true, continued to live for several days. Again according to reports, the first satellite, as planned and predicted, was drawn back into the earth's atmosphere, where it was consumed by the heat generated by its passage through the denser air, having completed about 1,400 circuits of the earth and covered a distance of about 36 million miles in 92 days. Thus the little moons and perhaps the beginning of the realisation of man's dream of the conquest of space.

Commonwealth Achievement

HAILED in many quarters as an event of even greater significance in its potential benefit to mankind was the announcement last week of the first major step in harnessing the thermonuclear or fusion reaction. Like the first splitting of a heavy atom, or fission reaction, this has been a British, or more properly, a British Commonwealth achievement. The process of the combination of the nuclei of atoms of heavy hydrogen (deuterium) in pairs as a result of collisions, from which the hydrogen bomb gets a great part of its enormous energy, was first discovered by Oliphant in 1934 in the Cavendish Laboratory under Lord Rutherford, following up earlier work in which Sir John Cockcroft had been concerned. A possible practical means of putting the process to work was proposed by Sir George Thomson (son of the famous J. J. Thomson, discoverer of the electron), whose experiments, started at Imperial College, where he was Professor of Physics, in 1947, involved heating a gas to such a high temperature that some of the atoms fused together. The men principally engaged in the more recent work at Harwell, which has resulted in the successful apparatus Zeta, are Mr. D. W. Fry, Dr. P. C. Thonemann, an Australian, and Dr. W. B. Thompson, a Canadian born in Belfast.

Unlimited Power

THE release of energy by the fusion process requires the heating up of the gas deuterium to enormously high temperatures to bring about a sustained fusion reaction similar to that by which the sun generates its energy. Although Zeta, in which temperatures of about five million degrees centigrade are being generated, is only a first step and it is estimated that a temperature of 300 million degrees or more will be necessary to produce more energy than is consumed, that is, a usable balance, Sir John Cockcroft has said that evidence that fusion reactions have already been brought about in Zeta carries 90 per cent conviction and that development up to commercial practicability stage could take as little as 10 years if all went perfectly and not more than 50 years at the worst. It was hoped that temperatures of 25 million degrees in deuterium would be achieved by the end of the year. Given the anticipated progress with Zeta or its counterparts and successors, it means that the supply of energy for human needs is secured virtually for ever, for heavy hydrogen occurs prolifically in sea water and is easily recoverable.

Direct Electrical Energy

WHILE the heat generated in the fusion reaction might be taken off through heat exchangers for steam generation in the orthodox way, there is also a possibility that electrical power can be taken directly from a thermonuclear reactor, thus saving the conversion loss through steam generation, which might exceed 70 per cent. Although the abundance of cheap electrical power of which Zeta gives promise is unlikely immediately to inspire a substitute for the convenient and independent internal-combustion-engined road vehicle, it could very well be used in hydrogenation plants to convert our still substantial reserves of coal into oil, thus making us independent of imported supplies. One of the very encouraging features of current thermonuclear work in Britain is that it is not shrouded in the great secrecy of earlier atomic work. Research by a commercial enterprise, Associated Electrical Industries, Limited, is proceeding on parallel lines to that at Harwell. The two teams work in close collaboration and hold joint progress meetings. Such enlightened practice will ensure that any future benefit from the work will be brought into commercial use without undue delay.

Forthcoming Events

February 1.—Railway Enthusiasts Club. Paper by Dr. G. D. Parkes, "The Hull and Barnsley Railway." At Clubroom, Farnborough, Hants. 4 p.m.

February 3.—Institute of Transport (East Anglia). Paper by Mr. D. E. H. James, "Highway Law." At Eastern Counties Omnibus Co., Limited, Norwich. 6 p.m.

Institute of Transport (Metropolitan). Paper by Mr. R. S. MacTier, "Liner Operation and Turnround in Port." At 80 Portland Place, W.1. 6 p.m.

Institute of Transport (Sheffield). Paper by Mr. E. Mensforth, "The Future of the Helicopter." At Royal Victoria Hotel, Sheffield. 6.30 p.m.

Society of Engineers. Presidential address. At Apartments of the Geological Society, Burlington House, W.1. 5.30 p.m.

February 4.—Institute of Transport (Gloucester and Cheltenham). Paper by Mr. T. Foord, "Law of Contract in Relation to Transport." At Midland-Royal Hotel, Gloucester. 7 p.m.

Institute of Transport (Irish). Paper by Mr. D. Stewart, "Training for Transport Management." At C.I.E. Club, Earl Place, Dublin. 6.15 p.m.

Institute of Transport. Informal luncheon. Speaker, Sir Edward Boyle. At Connaught Rooms, Great Queen Street, W.C.2. 12.30 p.m. for 1 p.m.

Institute of Transport (Midland). Paper by Mr. J. P. Addenbrooke, "Omnibus Timetables." At Exchange and Engineering Centre, Birmingham. 6.30 p.m.

Institute of Transport (North Western). Paper by Mr. E. W. Arkle, "Railway Management." At Town Hall Annexe, Manchester. 6.15 p.m.

Institution of Civil Engineers. Paper by Mr. N. E. V. Viner-Brady and Mr. H. M. Pearson, "The Use of Aerial Photography by Railways." At Great George Street, S.W.1. 5.30 p.m.

February 5.—Institute of Petroleum. Paper by Mr. P. J. V. Agius, "Mechanism of Sludge Suspension in Engine Oil." At 26 Portland Place, W.1. 5.30 p.m.

Institution of Railway Signal Engineers (York). Paper by Mr. W. M. Sweetenham, "Developments in Signalling Equipment in Relation to the 25-kV Electrification Project." At Signalling School, Toft Green, York. 5.30 p.m.

Electric Railway Society. Paper by Mr. J. H. Price, "Electric Railways of Moscow and Leningrad." At 153 Drummond Street, N.W.1. 7.15 p.m.

February 6.—Institute of Transport (Merseyside). Papers by graduates and students. At Chamber of Commerce, Liverpool. 6.30 p.m.

B.R. (Western Region) London Lecture and Debating Society. Paper by Mr. C. Holt, "Travel on Foreign Holidays." At H.Q. Staff Dining Club, Bishops Bridge Road, W.2. 5.45 p.m.

February 7.—Institute of Transport (Western). Paper by Mr. M. P. Glenister, "The Conveyance of Livestock and Perishable Traffic by Passenger Train." At Docks Office, Queen Square, Bristol. 1.15 p.m.

Institute of Transport (Yorkshire). Annual dinner and visit of president. At Great Northern Hotel, Leeds. 7.15 p.m.

Stephenson Locomotive Society (North Western). Paper by Mr. A. McNair, "The 4-4-0s of the Caledonian Railway." At Y.M.C.A., Fargate, Sheffield. 6.30 p.m.

THE AIR RAIL SCHEME

Adaptation of Alweg System

AIRPORT CONNECTION PROPOSAL

PLANS for connecting Central London and London Airport (referred to in our January 25 issue) were detailed by Air Rail, Limited, last week. The system proposed is an elaboration of the Alweg evolved by the representatives of the Swedish millionaire, Dr. Axel Wenner-Gren, and now shown in full-size form in Germany. The original two-fifths full-scale Alweg equipment was described in our issue of December 20, 1952. The proposal for London is not to use electric traction but to employ diesel-engined single-car units, each of which is capable of leaving the Alweg track or "air rail" to run on roads in the airport in the same way as existing airport coaches. To provide sufficient capacity the cars could be coupled for running on the air rail in two- or three-car trains.

Proposed Air Rail route from Victoria to London Airport

The Air Rail group proposes a route from Victoria (by the B.O.A.C. terminal) over the Southern Region railway via Clapham Junction, Barnes and Richmond to Feltham, where it would strike off through open country (partly over the Duke of Northumberland's River) and approach the airport around the south and west perimeter. On this section the line could be on the ground or in shallow cutting to avoid danger to landing aircraft; on the north side of the airport the cars could be detached from the Alweg rail and run on road wheels either to London Airport North or through the existing road tunnel to London Airport Central. This route will cause little interference with the amenities or with property.

Track

The two-way track consists of two prestressed, precast hollow concrete beams 2 ft. wide and 4 ft. 6 in. deep, carried above or alongside the existing railway on reinforced concrete pillars, portals or A-frames. The beams, for ease and speed of erection above the Southern Region tracks (particularly important factors in view of the limited time which normal railway operation would allow for possessions) would be made in 10-ft. sections assembled on site by prestressing cables to form 100-ft. lengths, in accordance with bridge-building practice.

The track can be at a higher or lower level as desirable and can be diverted to avoid the buildings or bridges which occur on the proposed route. It would descend to ground level where the cars would travel on the ground to go round the periphery of the airport. This would avoid the heavy expense and delay involved in the construction of a tunnel to the central complex since coaches destined for it or for aircraft near it could use the existing road tunnel. It is envisaged that the ground level track round the airport might be completed first.

Rolling Stock

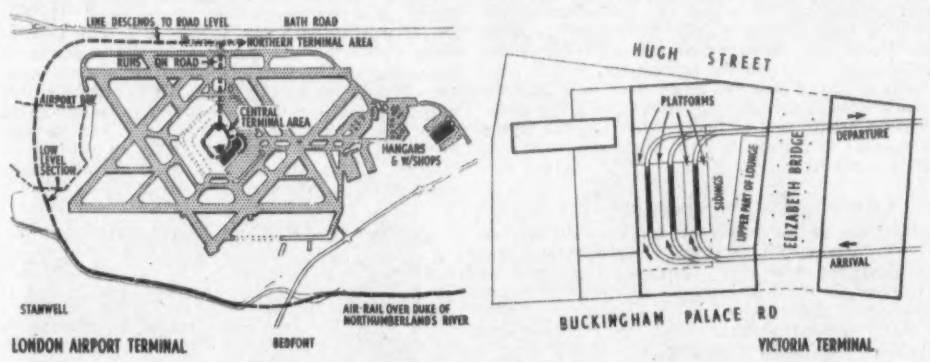
Rolling stock would consist of lightweight passenger coaches and freight cars. According to the sponsors of the Air Rail project they are best envisaged as a Green Line type of coach capable of rising above congested areas, and coming down to ground level at termini. The coaches would also be fitted with road wheels capable of carrying the vehicle round terminals and if necessary direct to aircraft. The 51-seat type shown on the diagram has two four-wheeled bogies for road use and for operation on the 2-ft. broad top of the concrete Air Rail; there are running wheels in the vertical plane and horizontal guide wheels. Rubber suspension is proposed for the wheels in the bogies with airbag mounting of the bogies in the vehicle.

This type of vehicle would be diesel-engined to give it the power of individual operation at London Airport; its length of 40 ft. and width of 9 ft. would preclude it from running on public roads without authorisation as a special type. The height is 12 ft. and the probable laden weight of even a lightweight vehicle 12 tons. The arrangement of the diesel engine and transmission, even in a vehicle 9 ft. wide, calls for some ingenuity; the power output has to be capable of overcoming the rolling resistance of rubber-tyred running wheels and the supporting guide wheels. The road wheels shown in the diagram are somewhat undersized but a well-proportioned model was demonstrated on Wednesday of last week and was shown as a four-wheeled vehicle. It is envisaged that two-coach or three-coach trains might be run as well as single trains, to accord with aircraft capacity.

Speed

The track has been designed with an eye to the future and is claimed to be suitable for speeds of 250 m.p.h. Present-day speeds are limited by tyre performance and although 100 m.p.h. has been mentioned as a figure it is understood that the schedule of 20 min. for the 16-mile journey is based on a maximum of about 70 m.p.h. Westinghouse has been approached for a suitable signalling system. Prepalletisation of passengers' luggage would save loading time and a capacity of 4,000 passengers an hour is suggested.

It is thought by the board of Air Rail, Limited, that costs will be comparatively low—perhaps £500,000 a mile or one-tenth the cost of a conventional underground railway. The cost of the Victoria—Airport line is put at £8 million, excluding the terminal at Victoria, but including compensation to British Railways for facilities during construction. Attention is also drawn by the promoters to the possibilities of the Air Rail form of construction in other circumstances—cross-country work in newly developed countries at a cost below that of an orthodox railway, for example. The London scheme would take, it is anticipated, about three years to build from the time of an Act of Parliament and a return of 12 per cent on the capital is confidently suggested.

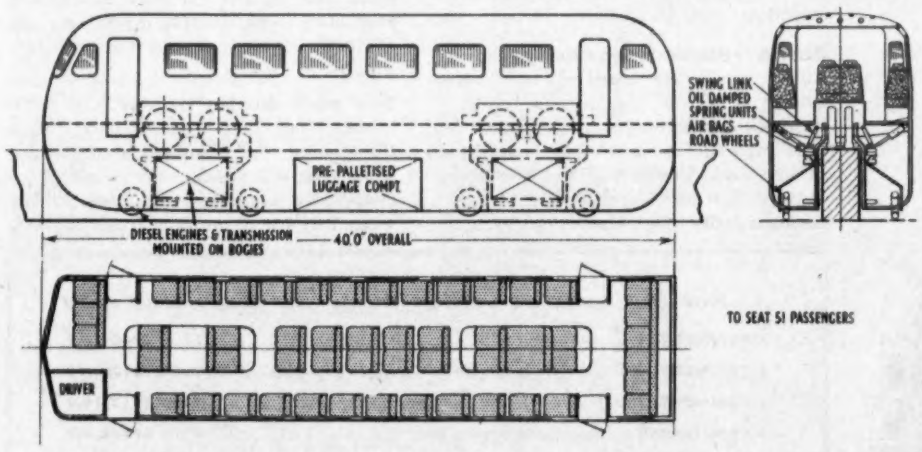


Details of suggested Air Rail terminal arrangements

Directors

The chairman of Air Rail, Limited, is Sir Alfred Bossom, Bart., M.P., and Mr. John Lowe is organising director. Other members of the board are Major-General R. F. K. Belchem, of Tube Investments, Limited; Mr. E. C. Beck, managing director, John Mowlem, Limited; General Sir William Morgan, chairman, Gloucester Railway Carriage and Wagon Co., Limited; Mr. E. G. B. Bush, Concrete, Limited; Mr. V. M. Ellison, managing director, Associated Portland Cement Manufacturers, Limited; Lieut.-Colonel F. T. Orman, Orman and Partners; Lieut.-Colonel G. W. Kirkland, Travers, Morgan and Partners; and Lieut.-Colonel T. P. Walmsley, of Slaughter and May.

It is understood that members of the railway inspectorate of the Ministry of Transport have visited Cologne to investigate the safety aspects of the Alweg system on the full-size test track erected near that city. It is also of interest that Gloucester Railway Carriage and Wagon Co., Limited, built the full-size car designed by Behr for his version of the Lartigue system. He and his friends obtained an Act for a Lartigue—Behr electric express line from Liverpool to Manchester in 1901, but were unable to raise the capital; the demonstration car—on steel tyres and rails, of course—attained over 98 m.p.h. in Belgium.



Projected 51-seat diesel vehicle for Air Rail use capable of running on airport roads

PROVIDENT MUTUAL

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B.R.S. Liability Limit Raised

FROM today (February 1) British Road Services is raising its limit of liability as defined in condition 9 (*a*) of the Standard Conditions of Carriage from £400 per ton to £800 per ton without extra charge. The extra cover, which takes account of the general increase in commodity prices since the standard conditions were issued in January, 1951, will apply to all goods dispatched on or after February 1.

Buses and their Use

MEMBERSHIP of the Omnibus Society at the end of 1957 had reached a total of 621, compared with 589 at the close of 1956, states the annual report of the hon. secretary. Mr. Raymond Birch has accepted the presidency for the year 1958 and gave his presidential address on January 27 when he took as his subject "Tracky" or the development of the services of the Yorkshire Traction Co., Limited, in the area around Barnsley. He has been chairman of this B.E.T. associated company since 1946 and had nine days earlier participated, as a past chairman of the Public Transport Association, in the B.B.C. Radio Newsreel programme. On that occasion he spoke in a brief discussion on the present plight of stage services and stressed the high proportion of rural routes that was unprofitable. It might well be that, unless the Government abolished the 200 per cent tax on diesel fuel, many country dwellers would lose their buses. He did not favour the use of 12-seaters which could never cope with peak days or periods and would merely make for duplication of the fleet.

U.S. Truckers Have Own Radar Check

THE New Jersey Motor Truck Association is establishing a radar system for truck drivers. No speeding tickets will result from this electronic supervision, but reports will be brought to the notice of employees as part of a campaign to discourage improper driving.

Sheffield Buys the Atlantean

SIX Leyland Atlantean double-deckers, the chassisless rear-engined vehicle with front entrance, have been ordered by Sheffield Transport Department. The order for the bodywork is being placed with Metropolitan-Cammell-Weymann, Limited. These are 78-seat highbridge type vehicles.

Retrenchment in the Isle of Man

CORPORATION bus services in Douglas, are to be curtailed immediately. There is an estimated deficiency at the end of the current financial year of £10,426, with a decline in passengers of between 8,000 and 9,000 per week. The staff representatives were informed that the whole of the existing staff could be retained only by working a 40-hour week by arrangement, excluding Sunday work. The union unanimously rejected this proposal and insisted on the agreement being adhered to. In the event of redundancies (17 employees would be redundant because of mileage reduction), they gave notice that they would refuse to work overtime, which meant they would work their 44-hour week over six weekdays and six hours on Sundays. In view of this the council decided to cut the services, and to cancel orders for the delivery of new buses in 1959.

Date for Wages Council Hearing

MARCH 5 has been fixed for a first meeting of the Road Haulage Wages Council to discuss the wage claim put forward by the unions last week. No further details of the claim have become available but it is understood that the unions intend to press this side by side with the 15 per cent claim currently before the National Joint Industrial Council.

Safe Transit for £40,000 Load

CARRYING an electronic computer valued at over £40,000, a B.R.S. articulated vehicle left Borehamwood on Saturday, January 25, on the first stage of a 500-mile door-to-door transit to Wetzlar, in Western Germany. The computer travelled on the semi-trailer throughout without transhipment or protective packing via the Tilbury—Antwerp ferry. The computer weighed about 3 tons and was 17 ft. long, 7 ft. high and 3 ft. wide.

The new Thornycroft Trusty eight-wheeler seen here has a Duramin light-alloy cab and body and is owned by a Cardiff haulier; an Austin 5-ton refrigerated van described on this page

Smart Refrigerated Van

DELIVERED to a Weston-super-Mare distributor of frozen foods, an Austin 5-ton forward-control diesel chassis shown on this page has a platform body on which is a streamlined container, fully insulated and refrigerated, and supplied by Mann Egerton and Co., Limited. A sunken well in the rear of platform body gives easy access to container and an airlock compartment at the rear of the container facilitates maintenance of low temperature when loading and unloading. Winget-Dole eutectic plates are hinged on lower mountings to the side of the container so as to allow for easy defrosting. An air space is provided between the top of the container compartment and the outer roof skin over which air is ducted from intakes on the front of the roof to the airlock compartment, outlets being provided by means of louvres on either side, and a refrigeration condensing unit is mounted in the airlock compartment. Hooks for removing the container from the platform are concealed in apertures in the roof curves.

Worldmasters on Service in Poland

A COACH service just inaugurated in Poland to carry tourists between Warsaw, Krakow and the winter sports centre at Zakopane in the Tatra Hills employs Leyland Royal Tiger Worldmaster luxury coaches operated by the State tourist organisation known as Orbis. The coaches, which are 18-ft. wheelbase models with left-hand drive, have 44-seater bodywork built in Denmark by Dansk Automobil Byggeri. Accommodation for luggage is provided underneath the floor and also on light chromium-plated luggage racks fitted inside the bus above the windows and flexibly suspended to avoid damage. Other features include oil burning heaters and radio. A second driver and steward are carried. The 435-km. route, including gradients of up to 17 per cent, is covered in about 9 hours.

Driver Could Not Engage Reverse

ADMONISHED at Dundee sheriff court on a careless driving charge after his bus had collided with and broken a plate glass window, a Dundee Corporation bus driver was alleged to have said that in negotiating a roundabout his bus finished up with his front wheels on the pavement. Instead of reversing off it, he kept moving forward and eventually crashed into the window. He had been attempting to engage reverse gear in the epicyclic transmission system. Unfortunately there was insufficient vacuum and the reverse gear did not engage. He tried the accelerator, and it went forward. He tried it six times, and each time the vehicle went farther forward instead of going back. Sheriff Christie said if really what he was trying to do was to engage reverse, that was really not careless driving.

Salisbury Plain—Glasgow Appeal

SITTING as an inspector for the Minister of Transport, Sir Maurice Holmes, Q.C., was occupied the whole of Thursday last week at Salisbury Guildhall hearing an appeal by Shergold and White, Limited (Silver Star Motor Services), Porton, against a decision of the Western area Traffic Commissioners on July 12 last, refusing it a picking-up point at Larkhill, for the conveyance of troops thence to Glasgow. At the same hearing a licence was granted to Mr. C. F. Stanfield to convey troops from Larkhill to Glasgow, and he now opposed the appeal. The appellant was represented by Mr. Ingram Poole, and Mr. R. Crowther represented the respondent.

Mr. Poole contended that the commissioners were incorrect in giving a licence to Stanfield as he did not run to Glasgow, whereas his client had been operating from Salisbury Plain, although not specifically from Larkhill, to Glasgow for 2½ years. The inspector: "It seems as if the Commissioners treated Mr. Stanfield as being the only operator from Larkhill?" Mr. Poole said that an operator in the north of the area had comparatively few picking-up points and was unable to collect sufficient passengers to justify running to Glasgow, whereas a firm operating from the south of the area could pick up the whole way and so obtain a sufficient load. By shutting out Shergold and White from Larkhill it might tend to prevent them running to Glasgow at all, although he had no authority for saying that they would do so. The Traffic Commissioners had not only misdirected themselves, but had given a decision which was unjust and one which would tend to damage the interests of the passengers.

Mr. Crowther, in reply, said that some two or three years ago the Highland Light Infantry was settled at Bulford, and appellants, and the Wilts and Dorset Motor Services, Limited, had licences to run from Bulford to Glasgow. Subsequently they were given a dispensation for the Royal Scots Greys at Tilshead. Stanfield held a monopoly in the north of the area; why should Shergold and White go to Larkhill, where they had never been, and so take the cream of the traffic? The only claim appellants could have to Larkhill was a licence to run to South Wales. Co-operation was the answer to taking the men these long distances, and while three operators were prepared to co-operate appellants said they did not find it possible to co-operate.

Aid for Ceylon Board

THE Ceylon Minister of Finance, Mr. S. Zoysa, has decided to make available to the Ceylon Transport Board Rs.6 million for the purchase of new buses and for its other immediate needs. The Treasury had refused the money earlier until the statement of accounts for the first three months of the operation of the nationalised bus service was submitted to it by the Board. The Minister of Transport has asked the Colombo Port authorities to give priority to buses which are arriving for the Transport Board. Cargo ships are being held up owing to severe congestion in the port. He has also discussed with the Governor of the Central Bank of Ceylon the question of the payment of compensation to the bus operators whose buses were taken over by the Transport Board. For this purpose a compensation tribunal is to be appointed soon. The chairman of the Board, Mr. Vere de Mel, expressed himself quite satisfied with the release of Rs.6 million. He said: "We shall order more buses at once. We are 400 short now."

Bus and Coach Developments

G. E. Wright, Bow, Devon, applies for the licences of P. W. Stiver.

J. E. and E. Pocknell apply for the licences of A. J. C. Giles (Viola Motor Coaches), Rotherhithe

I. B. Glass, West End Garage, Haddington, applies for the Haddington—Garvald service of Mrs. M. S. Fairbairn of the same address.

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New Vehicle for 56,000-lb. Loads

ROLLS-ROYCE TURBOCHARGED ENGINE AND TORQUE CONVERTER

WHAT is believed to be the largest end-tipping lorry available in Europe has just been added to the range of heavy-duty vehicles produced by Fodens, Limited, Sandbach, Cheshire. It is a two-axle vehicle designed to carry a payload of 56,000 lb. (28 short or 25 long tons) and is notable also for employing a 300-b.h.p. turbocharged diesel engine, hydrodynamic torque converter transmission and a disc-type handbrake operating on the front end of the transmission shaft.

The engine is the Rolls-Royce C-type six-cylinder direct-injection diesel of 742.64 cu. in. (12.17 litres) swept volume from bore and stroke dimensions of 5½ in. by 6 in. Incorporating the Rotol exhaust-gas turbocharger, the unit is set to give 300 b.h.p. at 2,100 r.p.m. and a maximum of 840 lb./ft. torque, with a specific fuel consumption at maximum b.m.e.p. of 0.355 lb. per b.h.p.-hr. The Rolls-Royce engine is of orthodox liquid-cooled design, with wet-type cylinder liners in a monobloc cylinder construction, light-alloy pistons, a seven-main-bearing crankshaft with viscous-fluid vibration damper and gear-driven camshaft and auxiliaries. The engine has wet-sump lubrication arranged to operate on gradients up to 1 in 4. A Simms fuel-injection pump incorporates a mechanical governor and is used in conjunction with multi-hole injectors spraying into toroidal combustion chambers formed in the piston crowns.

Torque Converter

The engine is mounted with the Rolls-Royce torque converter, which it drives through a 17-in. outside dia. Rockford over-centre clutch, through a two-link rubber-insulated front support and two Silentbloc mountings at the rear. The function of the clutch is to provide a free-engine position for idling and to facilitate use of a range-changing mechanical gearbox. The clutch-operating mechanism is so arranged that the clutch is engaged and disengaged by alternate downstrokes of the pedal. The hydrodynamic three-stage torque converter gives a maximum reduction of 5.3 to 1 and incorporates a freewheel member to provide positive dynamic braking on overrun. The converter working fluid is diesel fuel oil taken from the main tank; the fluid is cooled in a heat exchanger arranged in the engine coolant circuit.

Drive from the torque converter is taken through a tubular shaft incorporating Layrub universal joints to an independently mounted three-speed constant-mesh mechanical gearbox, which provides forward ratios of 2.03, 1 and 0.75 to 1 and a reverse ratio of 1.725 to 1. The gearbox is designed specifically to work with the torque converter and is intended generally for selection of the correct range for any given job before moving off rather than to change gear while the vehicle is in motion. The overdrive ratio is intended mainly for light running, when a maximum speed of about 30 m.p.h. is obtainable. Approximate maximum laden speeds in the different gears are low 10 m.p.h., intermediate 19½ m.p.h. and high 24 m.p.h.

Double-Reduction Axle

A Hardy Spicer Series 1900 propeller shaft carries the drive to a double-reduction rear axle, which has also been specially designed for this application. The unit comprises a massive cast-steel differential housing with bolted-on flanged tubes to carry the hubs and brakes. The bevel pinion is carried on pre-loaded tapered roller bearings and a roller journal bearing and the differential carrier is also mounted on tapered roller bearings. The differential has four large bevel pinions carried on bronze bushes. The spiral bevel gear has a reduction ratio of 3.7 to 1 while planetary hub reduction gears have a ratio of 4.94 to 1 giving an overall ratio of 18.4 to 1. The planetary gear runs in oil, with face seals to prevent leakage of oil into the brake drums, and deflector plates are fitted in the differential housing to direct oil on to the gear teeth and bearings. The axle casing is bolted directly to the main frame, Belville washers providing sufficient freedom to prevent twisting of the casing.

Chassis Frame

The main chassis frame is of 18 in. by 6 in. rolled joist-section side members, tapered down to 12 in. at the front ends. Front and rear cross members and a tipping-ram support member are welded in while cab-support and gearbox members are bolted in position. A full-width front bumper bar gives added strength and incorporates a towing jaw. The front suspension is designed to provide three-point vehicle suspension and incorporates two semi-elliptic laminated springs arranged transversely, mounted on trunnion brackets and large-diameter floating pins. Each spring has an eye at one end only, which locates the axle sideways, and the other end slides in a slipper block. Fore-and-aft location of the Kirkstall front axle is provided by two pressed-steel members anchored on ball pins.

The steering gear is of Foden design and manufacture. It employs a recirculatory-ball gear and is hydraulically power assisted, with the power cylinder mounted directly on the steering casing and external linkage so arranged that shock loads are kept away from the steering segment. An engine-driven gear-type pump operating at a maximum pressure of 1,000 p.s.i. Safety valves are incorporated in the hydraulic system to prevent the steering locking in the event of the engine stalling or the pump failing and the servo is inoperative when the vehicle is stationary, so preventing excessive tyre wear and damage through overloading.

Brakes

The rear brakes are 19½ in. dia. and 8 in. wide and the shoes are operated by S-type cams, with worm adjusters on each cam-operating lever. The front brakes are also cam-operated and are 19½ in. by 7 in. wide. Adjustment here is by lever-and-jaw mechanism at the ends of the camshafts. Hub brake operation is by air pressure using Clayton Dewandre units, including an engine-driven Tu-Flo 500 compressor. Piston-type actuators are 6 in. bore and 2½ in. stroke at the front and 6 in. bore and 6½ in. stroke at the rear. A hand-control valve is fitted so that the wheel brakes can be applied without using the pedal. The handbrake is of the disc type mounted directly behind the gearbox; the disc is 20 in. in diameter and independent adjustment is provided for the two friction facings in a single caliper.

Various tread types are available for the 18.00-25 28-ply tyres, single at the front and twins at the rear, which are fitted to 13.00-25 demountable and interchangeable wheels. Tyre rating at 70 p.s.i. pressure is 17,500 lb. The vehicle has a 24-volt compensated voltage-control system, with 153 amp.-hr. batteries. Standard electrical equipment includes electric starting, full lamp set, cab interior and reversing lamps and two windscreen wipers. General equipment includes a 50-gal. fuel tank mounted behind the cab and a Burgess oil-bath air cleaner and instrumentation comprises engine hourmeter, tachometer, speedometer, ammeter and oil-pressure and coolant-temperature gauges.

Body and Cab

The body is of all-welded construction and has a capacity of 18 cu. yd. The main framework consists of 7 in. by 5 in. pressed-steel channel, with a floor of sandwich construction having a ⅛ in. bottom plate, 1½ in. thick oak planking and ⅜ in. top plate. The side plates are ⅛ in. thick and of a special material developed to be resistant to abrasion; it is also claimed to be three times more resistant to indentation than ordinary mild steel. A protective canopy extends over the driver's cab. As an alternative to the sandwich-type floor, a single ¼-in. thick plate floor reinforced with 3 in. by 3 in. angles on edge is available. This construction is more suitable for hard rock, while the smooth finish of the standard floor is intended for general loads.

The Hamworthy tipping-gear pump is of robust construction, with balanced bi-metal wear plates on the side faces. Hardened alloy gears are all carried on needle roller bearings and a thrust bearing is provided on the input gear. The large double-acting single-tipping ram operates on a pivot beam, which has guided rollers to lift the body. The tipping control valve is mounted behind the cab; it incorporates a safety valve to limit pressure in the system. The loaded body can be fully tipped to 65 deg. in 8 sec. and the return under power takes 5 sec.

The fully enclosed steel cab is slightly offset to suit the left-hand controls. There is access from both sides and good visibility is provided from the driver's upholstered and adjustable seat. Auxiliary windows are provided to give a good view rearwards and immediately in front of the vehicle from the seated position. A heater-demister is included in the standard equipment.

Weights and Dimensions

The complete vehicle unladen weighs 48,000 lb., of which the body accounts for 12,900 lb. Unladen axle weights are 22,500 lb. front and 25,500 lb. rear. The designed payload is 56,000 lb., giving a gross laden weight of 104,000 lb. distributed 34,000 lb. over the front axle and 70,000 lb. over the rear axle.

The vehicle has a wheelbase of 13 ft. 6 in., an overall length of 26 ft. 4 in., width of 11 ft. and height to the top of the canopy of 12 ft. 7⅛ in. The height to the top of the body sides is 9 ft. 9 in. Clearance is 1 ft. 6 in. under the front axle and 1 ft. 4 in. under the rear axle. The maximum tipping angle is 65 deg. and the height to the top of the canopy in the fully tipped position is 20 ft. 2 in.

Two views of the mighty new Foden dumper which has a load capacity of 28 short tons

---

United Dominions Trust, Limited, announces the opening of a new branch office at 25 St. Werburgh Street, Chester.

Success is reported of the comprehensive training scheme operated by the British Oxygen group. The Edmonton factories of British Oxygen Engineering, Limited, and British Oxygen Gases, Limited (equipment division), now have over 100 apprentices receiving training, the largest number in the company's history. A new training school, opened in September, 1956, is now providing facilities for about 30 boys and three full-time instructors are employed. Training is provided at Edmonton in mechanical, electrical, chemical and production engineering and in commerce.

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ROAD HAULAGE ON THE B.R.S. SCALE

Advantages Outweigh Disadvantages

COMPLETION of the first decade of trading by British Road Services seemed an opportune juncture at which to examine some of the advantages of large scale operations in road haulage—and to see how some of the disadvantages of size could be overcome. This was the theme of a paper read by Mr. G. W. Quick Smith, a member of the B.R.S. board of management, before the Scottish section of the Institute of Transport in Edinburgh last week. It was, he said, of interest to attempt an evaluation of the practical advantages which had emerged. The subject gained added interest by virtue of the fact that it had for so long been commonly supposed that road haulage was an industry eminently, if not exclusively, suitable for small-scale operations with a personal service as its outstanding characteristic.

He had no wish to decry either the efficiency or the usefulness of smaller hauliers, so many of who had always commanded his admiration and respect. Neither did he propose to embark upon the highly interesting exercise of defining the place which large or small undertakings could best take in our transport economy.

One of the foremost advantages of large scale in road haulage was derived from the opportunity to plan operations on the most economic basis. It was obvious that empty running ought to be reduced to a minimum—it could not be eliminated altogether—if the cost of transport was to be kept down. A small haulier might be unable to employ his own representative at the destinations to which his vehicles went, and might have to rely either on a clearing house or on the driver himself to secure a return load—a process which took time even where a remunerative load was obtained. Even if he was a party to reciprocal arrangements with other hauliers this was not the same as the closely-knit organisation of a large undertaking with traffic offices in every trading centre of importance.

Clear Advantage for Smalls Traffic

In the case of parcels and small lots, public need could not really be met adequately without a large national undertaking. Unification had made it possible to eliminate overlapping services, rectify the circuitous routing of traffic caused by the desire of a carrier to keep traffic within the confines of his own services, and the elimination in most cases of intermediate transhipment which was necessary when an individual carrier did not have enough traffic between two centres to justify direct transit.

Small users might find it convenient to look to one or more local haulier, but this was not so in the case of large undertakings which had to move heavy tonnages every day. They regarded transport as a stage at the end of the production line in which regularity of flow was as important as in the earlier stages of production, and only the large haulage undertaking could command the reserve of resources necessary to safeguard the regularity of flow.

The Continental ferry service from Tilbury to Antwerp was developing and the inauguration of the European Free Market pointed to a promising future. As new packaging techniques were developed and more extensive use was made of refrigerated and ordinary containers, the time might, he thought, well come when a transatlantic ferry service for trailers and containers would become a feasible proposition.

It was commonly thought in some quarters that a small haulier could give a more personal service than a large undertaking. The personal or individual nature of the service in fact depended more on organisation than on size, said Mr. Quick Smith. Personal relationship could be easily established in a large haulage undertaking by organising the traffic office and its telephone exchange on the right lines so that one person was detailed to deal with particular routes or particular customers. In fact, B.R.S. traffic clerks were frequently on Christian-name terms with their counterparts in the customer's undertaking and, in the case of certain large customers, the traffic clerks were actually stationed inside the customer's premises.

The advantages of the most intimate and personal contact were destroyed if the person who dealt with the customer could not himself command the resources to meet the customer's requirements. In B.R.S. this difficulty was overcome by attaching vehicles to the traffic office-cum-depot. In other words, commercial and operational functions were fused, and experience of this arrangement stimulated interest in the moves in this direction now being made in British Railways. The nature of railway operations tended to encourage the divorce of commercial from operational activities and this might have been one of the factors that had given the road haulier the opportunity to build up his reputation for personal service. The build-up of that reputation had been assisted by the nature of road haulage operations.

Fallacies of Flexibility

Inflexibility was rightly regarded as one of the dangers of a large undertaking. But the arguments did not go all one way. A small haulier was flexible only within the limits of his capacity; he was not so flexible when it came to the question of coping with fluctuations in the volume or types of traffic to be handled or where the need for special ancillary services or for varying types of vehicles arose spasmodically. At best, he must rely on his ability to hire from outside sources. There was a case for saying that, in certain respects at least, greater flexibility could be achieved where personal attention at customer level was backed by diverse resources and expert knowledge at higher levels in a large undertaking.

It might be contended that in the matter of charges a large undertaking might have tended to be more rigid and reluctant to accommodate a particular customer for fear of running into trouble with others. But in a highly competitive world commercial considerations compelled rates to be tailored to suit the characteristics of particular streams of traffic and the best course was to give a local manager a large measure of authority and then let him stand or fall on his branch trading return.

Insofar as control was exercised from above, the lines must be kept clear so that quick decisions were given. One must, to quote a recent judgment, "avoid the position of being able to offer only a standard service at a standard rate." A large undertaking imperilled its very existence if it lost its commercial nimbleness. If correctly interpreted, with due allowance made for special factors, the B.R.S. branch account measured the success of the local manager in getting traffic at proper rates, carrying it efficiently and economically, and inspiring the team who must work together to achieve success. Weak spots could be pinpointed and remedial action taken before undue damage was done.

Handling Aids

Size lent itself to the exploitation of the advantages of mechanisation. In B.R.S. an officer with supporting staff was engaged solely on the work of promoting the use of mechanical aids and much progress had been made with modern appliances for the mechanical handling of goods. To take one example; experiments were in progress with a view to seeing how far platforms or banks for sorting parcels traffic could be dispensed with. Sorting then took place on the ground and, with mechanical aids, the parcels were loaded therefrom direct to the vehicle; the process was reversed when unloading. The new parcels depot in Dundee was unique in having no platform and the general haulage depot in Lister Street, Glasgow, was using the ground exclusively for the transhipment of traffic and for the temporary storage of goods in transit.

Throughout-palletisation of goods required the co-operation of the consignor, consignee and carrier and progress had therefore been less marked in this field. But palletisation was being increasingly used in B.R.S. warehouses and small cages were proving useful in handling small parcels in course of transhipment from one vehicle to another. A recent development was the use of containers for traffic arriving at Fratton Station in Portsmouth for delivery to quayside and transfer to boats for eventual delivery throughout the Isle of Wight.

The new tape relay and switching centre opened a few days ago in London linked all B.R.S. teleprinter terminals in England, Wales and Scotland, by the first press-button tape relay system engineered by the G.P.O. By this system it was merely necessary to press a button to relay to (say) Norwich a message received at the London exchange from Cardiff—no "retyping" or other manual intervention was necessary.

Best Brains for the Job

Hitherto (said the author) those engaged in road haulage had learned their craft the hard way and were none the worse for that. A large undertaking provided opportunities for training and education and for passing on the "know-how" on a scale which was quite impossible in an industry made up largely of small units. A large undertaking was more likely to attract capable men from other fields who could bend their talents to the betterment of the industry. Cross-fertilisation of this kind was essential if the industry was to avoid the inbreeding dangers that were inevitably associated with a closed shop.

Care must however be taken to avoid stifling enthusiasm or breeding a generation impervious to changing circumstances and blind to new techniques. The most powerful antidote would seem to be the creation of a tradition of service which was found by every new entrant to be sacrosanct and inviolable.

Joint consultative machinery of a comprehensive nature was more feasible in a large undertaking. Relations with unions could be happier because of the greater ease with which a large undertaking could reach and enforce its decisions as compared with an association of small undertakings. Always, of course, it must be borne in mind that machinery was no substitute for humanity—recognised procedures must be developed alongside sound human relationships.

Office Mechanisation

Tremendous advances had been made by the larger hauliers in U.S.A. and Canada in the use of computers. The whole process of accounting and documentation was treated as one interlocking system in such a way that accounting procedures and the production of statistical data were enormously accelerated with impeccable accuracy. B.R.S. was hoping to develop on similar lines and would be well placed in that the teleprinter network would enable it to feed data in machine language to a central point.

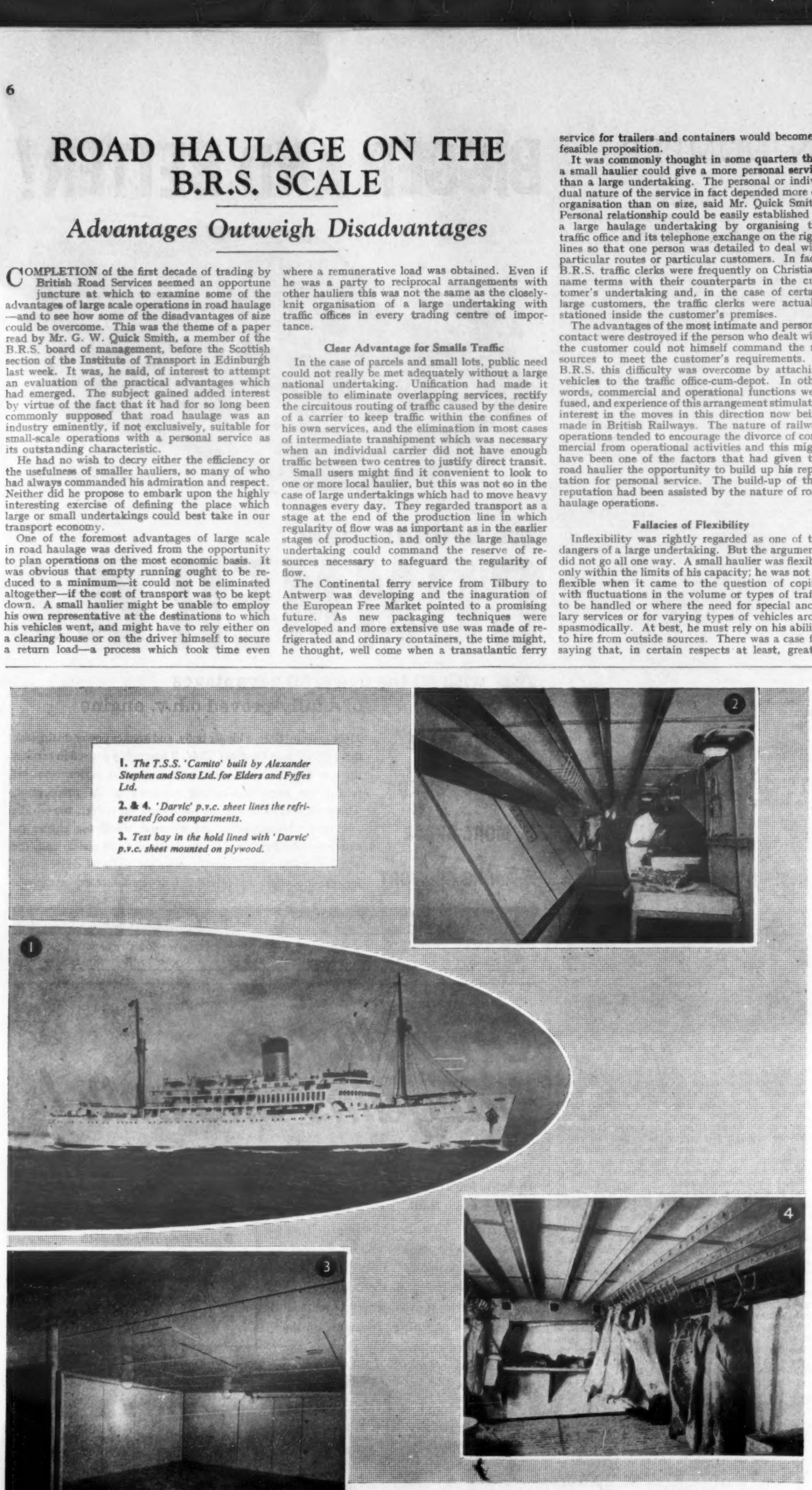
Committees were an incidental disadvantage as well as an occupational disease of large undertakings; a live business could not be run by committees—equally it could not be run without them. Skilful control of committee activities was essential. A large road haulage undertaking, in common with other law-abiding operators, could find itself at a serious disadvantage vis-à-vis competitors who did not observe the law. If hauliers were to compete on equal terms they must all operate fairly within the framework prescribed by law.

The Cost of Organisation in Scale

It was undeniable, Mr. Quick Smith continued, that there was a dangerous tendency for the overheads of large organisations to grow. The only remedy was a periodical internal overhaul of the structure and of work done. There was always the danger of statistics, returns and reports being continued long after the purpose for which they were designed had ceased to exist, and at regular intervals it was necessary for a searching inquiry to be made as to the use made by each recipient of each item of information. Generally speaking, no item of information had any value unless it was a signpost which indicated a course to be taken, a signal that confirmed that all was well, or a warning that something was wrong.

The real test of overheads was whether each £1 spent brought, directly or indirectly, a return of at least that value. Money spent on telecommunications might for example, be well repaid if the rapidity and accuracy of vehicle advices resulted in a higher load factor and it seemed that there

(*Continued on page 16*)



1. *The T.S.S. 'Camito' built by Alexander Stephen and Sons Ltd. for Elders and Fyffes Ltd.*

2. & 4. *'Darvic' p.v.c. sheet lines the refrigerated food compartments.*

3. *Test bay in the hold lined with 'Darvic' p.v.c. sheet mounted on plywood.*

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RAILWAY FREIGHT TRANSITS

Means of Improvement

CUTTING OUT MARSHALLING YARDS

IN a racy paper read before the London division of the Industrial Transport Association, Mr. G. F. Fiennes, Great Northern line traffic manager, Eastern Region, British Railways, described some of the freight facilities offered by the railways, taking the theme that they were granted an importance equal to those of the passenger service.

"In order," he said, "to keep to my theme, I am going to test our freight service by the same principles as we apply to passenger. These principles are, firstly, safety, which needs no explanation; secondly, convenience, by which I mean the hours between which the service runs, the frequency of the service and its structure; thirdly, speed—overall speed, not maximum speed; fourthly, reliability—punctuality, regularity and freedom from breakdown; fifthly, comfort—very much as in the passenger sense, smooth riding, freedom from shocks, heating and ventilation; and sixthly, cheapness."

Plan Taken in His Stride

He took the modernisation plan in his stride as no more than an acceleration of things which were already being done and would have been done in the fullneses of time whether the plan had seen the light of day or no. There was a great danger in railwaymen relying too much on the plan, saying that everything in the garden would be lovely when it had reached fulfilment, and relaxing their efforts until then. Worse than that, inevitably by publicising a modernisation plan, the railway implied that it was not modern now, and customers might infer that services were out of date.

MODERNISATION EXPENDITURE

	£ (millions)
Common to both services	
Improved track and signalling	210
Main-line electrification	120
Diesel locomotives	125
Other motive power	35
	490
Passenger	
Suburban and Southern electrification	65
Passenger carriages	230
Passenger and parcels	55
	350
Freight	
Wagons	156
Continuous brakes on wagons	75
Marshalling yards and terminals	140
	371

Finally, no physical re-equipment in electric and diesel locomotives, new signalling, new marshalling yards and freight terminals, in wagons fitted with continuous brakes, could by themselves, do very much without the men who had the ideas how to use them. The table of proposed expenditures showed that freight was getting a very fair crack of the whip.

Implementing Principles

The safety record of British Railways stood as high as any railway in the world. When they came to the convenience of a service, it was the convenience of the customer which counted. From his point of view the transit of goods was indivisible between door and door. However indivisible the transit to the customer the railways had to divide its operation, often into many parts. The unit of operation was the train load, 500 tons or more of freight. The trader's unit of trade was generally far from being a train load, more often less than a wagon load. The only indivisible transit therefore shared by trader and railway was a train load direct from sender to destination, such as coal from screen to tippler at a steel works, a power station, a gas works, or a port.

In all other operations the transit was broken by one or more intermediate handlings. Even a fairly straightforward transit might require 11 operations. Heavy industry was in the main served by private sidings; the predominant interest was not in speed of transit but in a steady flow inwards of raw materials and empty wagons which would keep processes moving on the one hand without anxiety about supplies, and on the other without congesting their sidings and crippling their finances with demurrage by over supply. For the same two last reasons clearance of outward traffic had to be planned, spread over the working day and reliably operated.

Private Sidings

The proportion of railway traffic passing through private sidings was often a surprise to people.

	Loading per cent	*Unloading per cent*
Coal	98	50
Minerals	80	90
Merchandise	70	50

"These people's predominant interest in transit is reliability rather than speed. Not that they do not have an interest in reducing to a minimum the amount of capital locked up in raw materials and finished products which are in the pipeline of transport, but if there has to be a choice, they prefer reliability, and their sheer physical limitations in their sidings preclude grouping services, inward or outward, for long distance high-speed trains."

The needs of light industry and the general consumer were a different kettle of fish. They were not concerned with a steady flow to avoid congestion and demurrage. In the main they handed those two problems back to the railways to grapple with at railway terminals. Their needs were to reduce the amount of goods in the pipeline to the minimum and to get a fast and reliable transit which did not interfere with processes of production and pleased their customers. Their demands were transits between say, 6 p.m. and 8 a.m. except for market traffic, which preferred later loadings often up to 8 p.m. and earlier arrivals between 3 a.m. and 6 a.m.

The Faster, the Cheaper

"It is not often realised to what a great extent the railways' own interests coincide with their customers in these respects. On a railway the faster you go, the cheaper you go. With a deficit of many millions staring us in the face, with traffic leaving us because of our costs, our need for cheaper operation is urgent and indeed almost desperate. I have found, over many years, that there is no better way to economy than speed. For all freight in the country 45 per cent of the time is spent at terminals, 42 per cent in marshalling yards, and 13 per cent only in movement on trains. Translating the same idea into costs a high proportion of the whole, 62 per cent, is attributable to the things whose cost is reduced by acceleration—the wagon, the engine, the train crew."

What was new was the recent impetus to put to good use the realisation that a sufficient concentration of traffic to make the installation of mechanical loading and unloading appliances worthwhile meant also a sufficient concentration to allow direct train loads from origin to destination and thereby cut out not only handling but marshalling yards. With the coal trade there were several proposals; the effect could be that whereas normally it took a coal wagon about 10 days for a round trip from colliery back to colliery, the Eastern Region had been running an experimental vacuum-fitted coal train direct from a midland colliery to a London gasworks, unloading it, and getting the wagons back to the colliery within 24 hours. This was speed indeed, but of the nine days out of 10 saved in the round trip, over 8½ were saved at the terminals and marshalling yards.

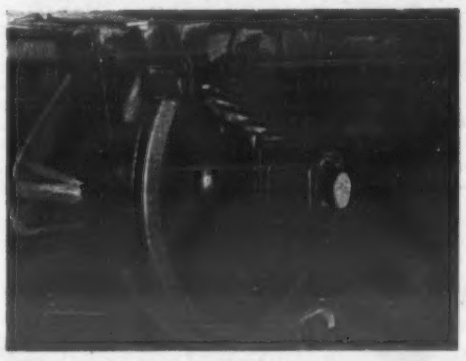
Eliminating Intermediate Handling

The second main thread of development was the elimination of two intermediate handlings, those at the railway goods sheds at each end of the journey, by the use of containers and pallets. In addition to the substantial growth in the fleet of standard type containers, a large order had just been placed by the British Transport Commission for some five thousand small box containers to meet the movement of the smaller size of consignment now passing. Increased use was being made of pallets in warehouses allowing traffic to be more economically stored at the same time increasing the capacity of the warehouse.

Some undertaking in the country had got to carry the smalls traffic and might as well do it efficiently. Again, the techniques were known—mechanical handling and sorting on conveyors at far fewer terminals. At present on the Great Northern central terminals were going up at Lincoln and Peterborough. Plans for Sheffield were well advanced. The next stage was to consider how to cut out the trips to the marshalling yard and the marshalling yard itself. On the Eastern Region in 1923 there were 98 yards, in 1945 99 yards, and mid-1958 there were 61 yards. In 1970 his guess was that there would be about 44.

Two Eastern Region Yards

"Two things about this. Firstly, that progress in the recent past has been at least as fast as it will be in the future; secondly, that the immediate future, with Temple Mills and Ripple Lane coming into operation this year and next and replacing between them 20 yards by four, was all planned



Improvement of freight facilities is exemplified by the introduction of The Blue Spot Fish Special recorded in our last issue. We illustrate one of the British Timken roller bearing axleboxes with special adaptors which have been used to achieve rapid conversion of the vans for the service

before the modernisation plan was conceived. I say this to reinforce the point I made at the beginning that the modernisation plan is only an acceleration of the process which has been going on and that in no sphere of railway work has progress been faster than in the rationalisation of marshalling yards."

One might reorganise a freight service in relation to its marshalling yards either by a direct replanning of the service or by reconstructing the marshalling yards to allow the service to be replanned. Illustrations of the first method were the closing in March, 1954, of Marks Tey, in April, 1956, of Whisker Hill at Retford, and in April, 1953, the largest move in a straight replanning, the closing of the Spital, Crescent, Wisbech Sidings and London and North Western yards, four in all, at Peterborough. The closing of these yards was a straightforward train planning job, basing the work on Whitemoor at one end, Toton, Chaddesden, Welham, Northampton and Crewe on the other. It saved something over £100,000 a year; it saved shunting something over 2,000 wagons a day, and by the introduction of through trains between the yards named instead of the traffic being shunted at Peterborough, it accelerated those 2,000 wagons a day by an average of some six hours.

Shunting Techniques

On the side of reconstruction, they were now fortunate in having techniques for shunting with automatic point operation and retarders, which enabled them to design yards capable of handling over one hump up to 6,000 wagons a day. Late in the nineteenth and early in the twentieth century, only about 1,000 wagons a day could be got through a freight shunting yard; when humps were introduced, little over 2,000 a day. The result was Temple Mills and others, where little yard had been added to little yard as traffic grew over the years, each capable of doing their 1,000 to 2,000 wagons a day and each finally occupied in shunting to a great extent traffic transferred from one yard at Temple Mills to another yard at Temple Mills. The new design there enabled virtually the whole of this transfer between the yards, amounting to some 3,000 wagons a day, to be cut out and enabled an acceleration of the movement of all traffic on the average through the area by some nine hours. Moreover, the new yards enabled them also to close two yards at Goodmayes, one at Thames Wharf, one at Mile End, one at Northumberland Park and one at Broxbourne. In all, 16 yards become three and of something over 12,000 wagons shunted at present they would in future need only to shunt 5,000.

One of the fifty-seven new 3-car multiple-unit electric trains for Euston to Watford and Broad St. to Richmond Services of the London Midland Region of British Railways—built at Eastleigh and Ashford, and fitted with

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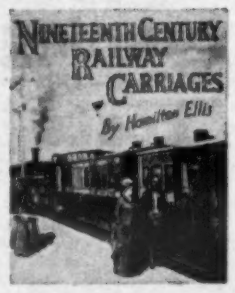

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HOW TO GET THERE is a London Transport booklet listing, in alphabetical order, some 400 of London's places of interest, with the fullest details of times of opening, prices of admission and how to reach them by bus or Underground. Price 6d.

LONDON GENERAL tells the fascinating story of a century of bus transport in London, from the horse bus of 1856 to the R.T. bus of today. There are many illustrations. It costs 5/-.

FIFTY YEARS OF THE HAMPSTEAD TUBE tells the eventful story of the building of London's youngest tube railway, now part of the Underground's Northern Line. Price 2/-.

COUNTRY WALKS are London Transport guides intimately describing rambles in London's countryside with photographs, maps, notes on points of interest and details of how to get there and back. Price 2/6 each.

CHRISTOPHER WREN is a booklet which lists and describes the examples of the great architect's work to be found in and around London. There are travel directions, and there is also a map to help you find his Churches in the City. Price 6d.

LEAFLETS. London Transport issues free leaflets dealing with historic houses, museums, art galleries and public spectacles like the Changing of the Guard.

MAPS. London Transport also publishes free pocket maps of all its services – Underground, Buses and Green Line Coaches. All are simple, easy to understand and give full details of routes. And, if you are in any difficulty about travel in London, at any time, you can ring ABBey 1234 and ask for Travel Enquiries.

All London Transport publications can be had from either of the **TRAVEL ENQUIRY OFFICES** at **PICCADILLY CIRCUS** and **ST. JAMES'S PARK** Underground Stations or from the **PUBLICITY OFFICER**, London Transport, 55 Broadway, Westminster, S.W.1.

NEWS FROM ALL QUARTERS

Safety Code in Civil Engineering

Draft regulations circulated by the Minister of Labour lay down initial measures proposed as part of a code of safe working in the civil engineering industry.

C.P.R. Forms Power Subsidiary

A new oil and gas development subsidiary has been formed by the Canadian Pacific Railway. Entitled Canadian Pacific Oil and Gas Company, it will engage in all phases of the development of oil, gas or other mineral resources, from prospecting to final sale of the product.

Guide to National Insurance

A new edition of the booklet *Everybody's Guide to National Insurance* has been published by the Stationery Office, price 6d. It explains the operation of the two schemes of national insurance—the main scheme (compulsory for nearly everyone) and the industrial injuries scheme (compulsory for everyone working for an employer).

Safety Colours in Industry

Reduction of industrial accidents is the aim of the British Standards Institution's recommendations on safety colours in industry, just published as BS2929. The purpose of these recommendations is to establish throughout industry the use of a universal system of colours for the identification of hazards and safety equipment. The new system is in substantial agreement with the code of safety colours shortly to be recommended for worldwide adoption by the International Organisation for Standardisation.

Long Load on Train Ferry

Specially fitted British Railways wagons were recently dispatched to Venice to pick up three very large pieces of oil refinery equipment destined for the Isle of Grain, Kent. The consignment includes a 140 ft. long solvent stripper, an extract tower 85 ft. long and a 57 ft. waterwash tower. This load will travel in one train throughout its journey and is expected to reach Zeebrugge about February 10, where it will be loaded on to one of the train ferry vessels for Harwich. From there it will go via Temple Mills, Crouch Hill, Gospel Oak, Willesden and Kew.

New York—New Jersey Subway Loop

Establishment of a bi-state public agency, the Metropolitan Transit District of New York and New Jersey, is recommended by the Metropolitan Rapid Transit Commission sitting in New York to find ways of improving suburban transport between the New York City area and the northern area of New Jersey. There is no existing local government agency which has both legal power and financial resources to undertake these tasks, specifically construction of two Hudson tunnels at 59th Street and the Battery to connect New Jersey with a new Manhattan subway under Fifth and Madison Avenues. A spokesman for the Hudson and Manhattan Railroad has proposed an alternative scheme utilising rail facilities with one new river tunnel. These would enable Hudson passenger ferry services to be withdrawn.

Glasgow Suburban Electrification

Work is going ahead on the Scottish Region Glasgow suburban electrification scheme, and this week a start is being made on the first of the foundations for the overhead wiring system between Singer and Westerton.

Computor for Railway Stocks

The first Hollerith 550 electronic calculating machine to operate in the Central African Federation has been installed in the Rhodesia Railways Hollerith bureau in Bulawayo. The first task of the new machine installed in the accounts and finance department will be to keep a stores ledger showing all issues and receipts and their up-to-date values and balances at all stores.

Birfield Engineering Division

Birfield Industries, Limited, sales organisation of the Birfield group of companies, announces the formation of an engineering division, which will be responsible for co-ordinating the selling activities of the Birfield group in conjunction with the existing automotive, railway and aviation divisions of Birfield Industries, Limited. The new division will bring to customers in the general engineering field the benefits of the collective knowledge and combined resources of the whole group of manufacturing companies, numbering more than 20 in all.

Thames Passenger Services Committee

The Minister of Transport has reconstituted the River Thames Passenger Services Committee with the object of providing a forum where the principal organisations interested can consider questions which will assist the provision and development of passenger transport facilities on the river. The chairman of the committee is Lord Macpherson of Drumochter and members include representatives of the Thames Passenger Services Federation, Port of London Authority, the London County Council, the Hammersmith Borough Council, the Metropolitan Police (Thames Division), the London Transport Executive, the British Travel and Holidays Association and the Ministry of Transport and Civil Aviation.

U.S. Railroad Leader on Competition

Appearing before the Surface Transportation Sub-Committee of the U.S. Senate Interstate and Foreign Commerce Committee, Mr. W. A. Johnston, president of the Illinois Central Railroad, declared recently that the competitive balance between the different modes of transport should be determined by the free play of competition (not regulation), in which each form of transport should be allowed to exercise its cost or other inherent advantage. The only conditions that should be imposed are that the rates are reasonably remunerative and do not discriminate among users. One remedy of the transport problem lay in repeal of the federal transport excise taxes which were originally imposed during the 1939-45 war. These discriminate in favour of private carriage, which is exempt from the tax, he pointed out, adding that there is a pyramiding of the tax on freight when products are moved from one location to another for completion of various manufacturing processes.

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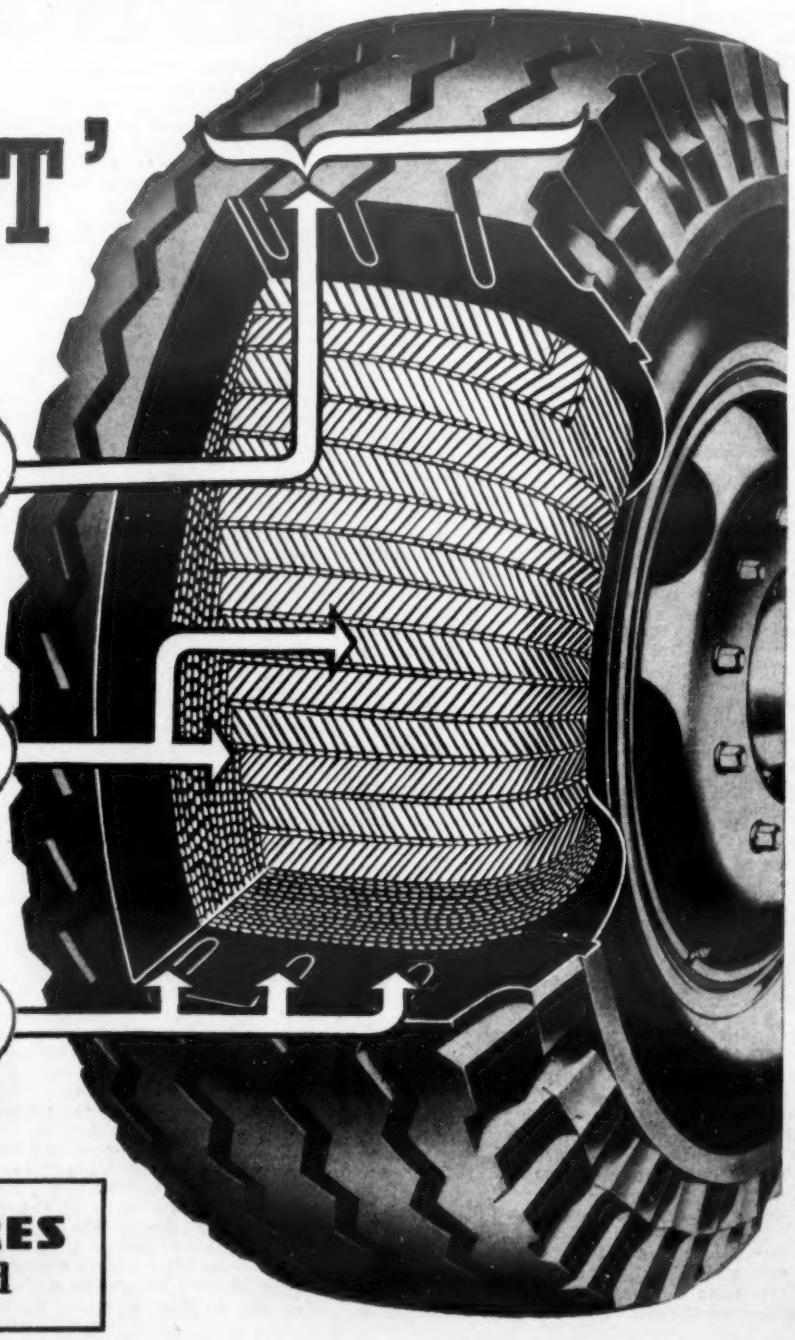

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COMMERCIAL AVIATION

B.O.A.C.—B.E.A. Agreement

AN INGENIOUS TOUR

EXTENSION of operations by British European Airways into the Persian Gulf acting on behalf of Cyprus Airways is foreshadowed in an agreement with the British Overseas Airways Corporation as to common routes, announced in a joint statement in their respective staff magazines by Mr. Basil Smallpeice, managing director, B.O.A.C., and Mr. A. H. Milward, chief executive, B.E.A. They recall that at the inception of the corporations it was never intended that they should compete with each other and with this in mind their spheres of influence were defined. The arrangements, however, they continue, were bound to create a conflict of interest between them. Inevitably B.O.A.C. flew in parallel with B.E.A. between London and several points in Europe and this deprived B.E.A. of traffic in which it had a primary interest. Arrangements have been in force from the start whereby revenue over common sectors was pooled, but the fact remained that B.O.A.C. was depriving B.E.A. of business.

Accordingly, it has been agreed that B.O.A.C. is now free, after consultation with B.E.A., to operate through any point in Europe it may desire, and B.E.A. is permitted to extend its services to Beirut, Tel Aviv, and Cairo and will also operate services to the Persian Gulf on behalf of Cyprus Airways. The services are dependent, however, on the rights granted by foreign governments in the various bilateral arrangements.

T.C.A. to Brussels and Zurich

Belgium and Switzerland will this spring be added to the international route pattern of Trans-Canada Air Lines. Services will begin to Brussels on April 2 and to Zurich on May 17. Initially there will be one flight a week, but this frequency will be doubled on June 3. The Belgian flight will at the outset operate Toronto—Montreal—Brussels—Düsseldorf, while the service to Switzerland will operate Montreal—Paris—Zurich.

K.L.M. Slows Down Plans

K.L.M. (Royal Dutch Airlines) is slowing down its plans for development. The suspension of the five-times-a-week service from Amsterdam to Djakarta, the ending of assistance given by K.L.M. to Garuda Indonesian Airways, and a recession in international tourist traffic as a consequence of general uncertainty in world economy, are mentioned as causes for this action. The decision will have some repercussions on the K.L.M. staff.

Blackpool—Ostend Service

Plans for the operation of a new service between Blackpool and Ostend have been announced by the Northern Division of Silver City Airways. The service will begin on May 4 and will operate initially each Sunday. Flight time between Squires Gate Airport, Blackpool, and Middlekerke Airport, Ostend, will be 2½ hr. and 36-seat Douglas DC3 aircraft will be used. Fares will be £8 13s. single and £15 14s. return. Squires Gate Airport is to have H.M. Customs facilities with effect from May 1, a facility which will obviate the need for Channel Islands—Blackpool services calling at Liverpool or elsewhere for passenger clearance.

New Services Approved

The Minister of Transport and Civil Aviation, after considering the recommendations of the Air Transport Advisory Council, has approved the operation of the following air services:

An inclusive tour service between London (Blackbushe) and Munich; Eagle Aviation, Limited, until March 23, 1958.

An inclusive tour service between London Airport and Zurich; Hunting Clan Air Transport, Limited, until March 1, 1958.

An inclusive tour service between London (Blackbushe) and Basle; Eagle Aviation, Limited, until March 22, 1958.

An inclusive tour service between London (Blackbushe) and Zurich; Eagle Aviation, Limited, until April 13, 1958.

An inclusive tour service between London (Blackbushe) and Munich; Eagle Aviation, Limited, until March 2, 1958.

An inclusive tour service between London (Blackbushe) and Basle; Eagle Aviation, Limited, until March 30, 1958.

Kitchen Equipment by Air

On January 27 Rubery Owen and Co., Limited, started a pilot scheme for the export of goods solely by air. It is based at first on the export of 2,000 washing machines by air to Belgium. All the exports to Belgium of the Easiclene kitchen equipment subsidiary of the Rubery Owen group are taken from Wolverhampton by lorry to Southend Airport. From there they are flown to Ostend on the Air Charter-Sabena service and from Ostend more lorries take the exports to Brussels. They arrive there 48 hr. after leaving the British factory. This compares with a 10- to 14-day delivery by the normal surface route. It is also expected that there will be a marked reduction in the amount of damage in transit.

Temporary Closing of Ratmalana

All traffic now operating through the Ratmalana Airport, Colombo, is to be diverted to Katunayake from March 1 because of the unsatisfactory condition of the runway at Ratmalana. Efforts by the Directorate of Civil Aviation to prevent this by carrying out repairs at night have not succeeded because the runway has deteriorated considerably in recent months. The runway was also severely taxed during the flood emergency when planes from the United States, India and Canada operated a large number of unscheduled flights for relief work all over the island. B.O.A.C. is already using Katumayake for its Britannia services. It was granted this concession because of the unsatisfactory condition of the runway at Ratmalana.

An Ingenious Idea

Milbanke Tours, Limited, operator of Flair Holidays, has announced that it has entered into a partnership with Lane's (Air Charters), Limited, to offer a new type of motoring holiday, to be known as Motours. These holidays will employ Handley Page Hermes aircraft chartered from Britavia and departures will be on a weekly basis. Holidaymakers may fly to either Nice or Munich where they will find a self-drive car at their disposal for two weeks. They will be provided with accommodation in a first-class hotel for one night and will then drive to either Munich or Nice at their leisure during the subsequent 13 days. A number of alternative routes will be suggested but the actual routes taken will be at the discretion of the holidaymaker. At the termination of their journey they will return by air to London the following day. All cars will have radio and a sunshine roof. The tour will cost 55 guineas for two people together with car fuel and hotels and other expenses while on the road.

CHAMPION OF ROAD HAULAGE

The late Mr. ROGER W. SEWILL, C.B.E., M.A.

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We record with regret elsewhere in this issue the death of Mr. Roger Waterlow Sewill, aged 65. Although his activities had latterly been centred on other fields, he was in the thirties and forties one of the best-known spokesmen of the road haulage industry. He was educated at Tonbridge School and Clare College, Cambridge, taking his Economics Tripos in 1914. He was commissioned in 1914 and left the Army in June, 1919, with the rank of captain. After two years as a farm pupil, he entered transport in January, 1922, becoming managing director of the London and Southern Counties Transport Co., Limited, a position he held until 1935. The company began with two converted Buick ambulances in the yard of the Swan Hotel, Reigate, and gradually built up an organisation through the south and west of England, justifying the slogan "Spans the South." One of the main traffics carried in the early years was milk from Surrey, Sussex and Kent to London. Subsequently services were run from the West of England for market produce. Perhaps the most spectacular achievement was the inauguration of the famous "Flower Express" from Penzance to London, carrying spring flowers from the Scilly Isles to Covent Garden. This caused a furore in 1932. In addition, the company for a period carried Scotch lamb and beef from Scotland to Smithfield at one time running a regular service from Inverness to London. The company pioneered in fitting vehicles with apparatus for hanging carcases from the roof. In 1931 Mr. Sewill was a founder member of the Road Haulage Association. He became one of its two vice-chairmen in 1932 and served as chairman, 1933-35. In 1935 when the R.H.A. became merged in Associated Road Operators, Mr. Sewill took up the post of director of the latter. Although for this purpose he relinquished the managing directorship of his own company, he retained a seat on the board of Pye and Counties Transport, Limited. Mr. Sewill was also a founder member of the British Road Federation and in 1939 he was appointed the first chairman of the road side of the Road and Rail Central Conference. He was a member of the Road Haulage Consultative Committee and was appointed by the Minister of War Transport to the Road Haulage (Operations) Advisory Committee, dealing with the Government Road Haulage Scheme. When, under that scheme, the Hauliers' National Traffic Pool was set up in January, 1942, he was made its general manager and secretary. He was for a long period a deputy leader of the employers' side of the Road Haulage Central Wages Board and was a member of the Standing Joint Committee of Road Hauliers' National Organisations. He was necessarily involved in the prolonged negotiations which preceded the establishment of the National Road Transport Federation and its three constituent bodies to coalesce the existing associations. Appointed director and secretary of the Road Haulage Association when it was formed in 1945 in accordance with the agreed scheme he resigned his directorship in June, 1948, but continued as national consultant to the R.H.A. until the end of that year. Thereafter he was closely concerned with the work of Aims of Industry, a task which he only gave up little over a year ago. He received the C.B.E. for political and public services in the 1957 New Year Honours.

IN PARLIAMENT

Technical Report on Monorails

OPENCAST COAL FORECAST

AT question time on Thursday last week, the Minister of Transport, MR. H. WATKINSON, said in a written answer that he was studying means of improving communications by road and rail between London Airport and Central London, including monorail systems in which connection Mr. G. R. H. Nugent, his joint Parliamentary Secretary, recently inspected the Alweg demonstration length of monorail near Cologne. He (the Minister) hoped to make a statement after he had considered reports now being prepared by technical experts. In this week's debate on the B.E.A. and B.O.A.C. reports, Mr. Watkinson said that plans for the provision of an ordinary railway link put the cost at around £20 million, due to the need for a deep tunnel under the runways.

Lewes—East Grinstead Branch

The report of the Central Transport Consultative Committee on the B.T.C. proposal to close the Lewes—East Grinstead railway branch was received by the Minister of Transport on January 10. He is arranging for it to be published as soon as possible.

New Regulations for Flashing Indicators

Fresh proposals regulating the type of flashing indicators made legal for use on road vehicles are shortly to be circulated, MR. G. R. H. NUGENT told the Commons. (It is reported that, inter alia, these will require flashing indicator lights to be amber and separate from other lights.)

Complaints to Consultative Committee

The Central Transport Consultative Committee considered about 50 complaints and suggestions in 1950 and about 20 in 1956; of these 34 and 11, respectively, were referred to the British Transport Commission for consideration, stated the Minister of Transport. The figures for 1950 included, he explained, a number of local complaints and suggestions which would nowadays be dealt with by the Area Transport Users' Consultative Committees, only two of which had then been formed.

Convicted Driver and P.S.V. Licence

A case in which a person with three convictions for careless driving was issued with a p.s.v. driver's licence was criticised by SIR F. MEDLICOTT. He had a subsequent further conviction, and MR. G. R. H. NUGENT was asked that the regulations should be tightened up in the interests of road safety. He replied that the traffic commissioners, in issuing the licence, had taken account of the fact that the man had had a clean record for some time, but he was warned for the future. After the latest conviction the licence had been revoked. Mr. Nugent said the regulations had proved satisfactory.

Railway Carriage Toilets

The construction and use of closets in railway coaches was recently considered by an expert committee set up by the British Transport Commission, with the object of avoiding, if possible, the discharge of untreated excreta upon the permanent way, said MR. G. R. H. NUGENT. It confirmed the view taken by the European and American railway administrations whom it consulted that there is no practical alternative to the present method of disposal, but the committee recommended certain modifications in existing equipment which are being considered. Mr. Nugent, in response to pressure, said he would urge the B.T.C. to continue the study of possible alternatives.

Flags of Convenience Proposal

Replying to MR. S. IRVING, the Minister of Transport said that a recent suggestion by the president of the Chamber of Shipping for dealing with the problem of flags of convenience in shipping by the formation of a club by those nations suffering from the competition of these bogus flags, was a personal idea. The club would not allow ships built or owned in their countries to be registered in or sold to any country outside the club. MR. H. WATKINSON said the scheme would affect shipbuilders as well as shipowners. He understood that a committee of the shipowners' organisations was reviewing the whole question, and expected to have discussions with them as soon as their conclusions were ready.

Opencast Coal Forecast

Moving the second reading of the Opencast Coal Bill, MR. R. MAUDLING, the Paymaster-General, said that opencast mining had so far produced 160 million tons of coal in this country. Last year we got 13½ million tons, which to import would cost us about £100 million, most of which would have to be paid in dollars. The Government considered that coal must be a plus and not a minus in the balance of payments. Last year, the net effect of coal was to earn more by our exports than it cost us to import coal. That was a process which must continue and we must aim not only to meet our inland requirements, but also to expand our exports. There would be a continuing need for opencast coal for a considerable period. SIR A. BRAITHWAITE claimed that, in 1956, while the National Coal Board lost £8 million producing 200 million tons of coal, the opencast division of the Coal Board made £8 million for the nation on the production of 13 million tons.

Scottish Bus Shelters Bill

A second reading was given on January 24 to the Local Government (Omnibus Shelters and Queue Barriers) (Scotland) Bill, a private measure promoted by SIR JAMES HENDERSON-STUART. He explained that its purpose was to give to all Scottish local authorities the right, if they chose to use it, to "provide and maintain" such shelters ". . . in any highway within their district which is comprised in the route of public service vehicles. . . ." The right conferred by clause 1 (1) applied to all local authorities. In practice, cities and burghs already enjoyed the power to erect shelters under other Acts. Clause 1 extended that provision to county councils and to district councils, and, therefore, to all local authorities in Scotland. The Bill also enabled any local authority—city, burgh, county council or district council—to co-operate with any other local authority, or ". . . any person authorised to run public service vehicles. . . ." The British Transport Commission accepted the provisions of the Bill.

Supporting the Bill, MR. J. N. BROWNE, Joint Under-Secretary of State for Scotland, said the Scottish committee of the Council of Industrial Design had produced illustrations of bus shelters of suitable types, together with information as to the manufacturers.

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

LOOKING AHEAD

Provisional Requirements for VTOL Aircraft

B.E.A. GUIDANCE FOR MANUFACTURERS

ALTHOUGH British European Airways has no requirement this year for a VTOL aircraft its project and development branch has very helpfully drawn up a provisional requirement for such a machine as a guidance for manufacturers and others interested. The largest payload capacity, and size of VTOL aircraft which is generally agreed to be within the competence of existing design knowledge is specified. This line of approach leads to the broad definition of an initial design payload and developed payload. Thus, the design initial capacity should not be less than 40 seats over a 200 nautical mile stage with a standard seating arrangement. The ultimate development should be capable of accommodating at least 50 seats over a 200 nautical mile stage. A statement is required from the designer of the factors which would make this a reasonable expectation.

The aircraft is to be designed to concepts of airworthiness equivalent to B.C.A.R. Group A. De-icing or anti-icing and handling qualities at all flight speeds which do not impose excessive demands on the pilot in the worst meteorological conditions are required. Particular attention must be paid to the design and manufacture of all parts subjected to fluctuating loads, which must be proven by rig tests before the aircraft enters into services, and which are continued during the service life of the aircraft.

Performance

Unless otherwise stated, maximum take-off weight and ISA + 10 deg. C. and 80 per cent relative humidity conditions are to be assumed; all performance is outside the ground cushion. The fuel load for any stage is to be calculated on the engine manufacturer's stated fuel consumption +3 per cent at the power output required on climb descent and at cruise altitude at the average cruising speed together with the following reserves: fuel needed for an overshoot and climb to 1,000 ft. and second landing and the fuel required at the minimum power for level flight for 60 min. duration in the case of hold-off or diversion. Tankage shall be provided for stages of up to 300 statute miles length in a 40-knot headwind with appropriate reserves and allowances.

The cruising speed should be not less than 300 knots with engines operating at the manufacturer's recommended cruise power and the aircraft at 95 per cent of the maximum take-off weight. The vertical rate of climb at sea level and maximum continuous or 1-hr. rating of all engines shall not be less than 600 ft. per min., without ground effect, and at zero forward airspeed, while the hovering ceiling without ground effect and with maximum continuous or 1-hr. rating of all engines shall be at least 5,000 ft. With the critical engine or engines inoperative and the remaining engine(s) operating at the maximum continuous or 1-hr. rating, the rate of climb at the best forward speed for climb shall be not less than 150 ft. per min. at all altitudes between sea level and 5,000 ft. and the gradient of climb not less than 2.5 per cent.

Take-Off and Landing

The VTOL aircraft should be capable of operation out of and into sites of limited dimensions closely surrounded by obstructions. The characteristics of such a site may be taken as those described in the report of the second I.A.T.A. helicopter meeting (Brussels, 1955). In the event of failure of the critical engine or engines at any stage of the take-off from the site it shall be possible to return safely to the take-off area or continue flight and land elsewhere. It shall be possible without requiring exceptional pilot skill to approach and land in a crosswind at least equal to the minimum level flight speed of the aircraft with the critical engine or engines inoperative and the remaining engine(s) delivering maximum or emergency power.

The pilot's view shall be adequate for approach to the landing site in limiting weather conditions (when light patterns on the surface of the landing site must be clearly seen) at all angles of the approach path up to at least 30 deg. to the horizontal. A direct-vision opening shall be provided so that the pilot when using it can make a steep approach and landing without moving his position excessively or in such a way as to make his control of the aircraft unsatisfactory.

The designer is asked to submit estimates of emergency distance, take-off, distance after critical engine failure and climb-out gradient for different weight, altitude and temperature and for different speeds at which the engine fails; in estimating emergency distance, a delay of 2 sec. between engine failure and initiation of action to discontinue take-off should be allowed. To take advantage of landing site situations alongside waterways, the ability to land on water in emergency and to fly off under its own power is desirable; an estimate of the penalties should be given.

Handling

Experience in helicopter operations to the present time has emphasised the need for greatly improved handling characteristics in instrument flight, which will be a regular feature of scheduled operations. The essential need when using restricted sites for steep flight paths at low forward speed in landing and take-off is for good flying qualities under these conditions, both under full power and in the event of engine failure. Further, operation into small sites closely surrounded by obstructions will, in gusty conditions, demand good co-ordination of control and crisp response.

The C.A.R. (Sections 6.120 to 6.123) and B.C.A.R. (Section G, paras. 2-6 to 2-10) lay down minimum requirements to be met by rotor-craft, and should where appropriate be fulfilled by VTOL aircraft. In addition, the following requirements should in general be satisfied. The stick-free manoeuvre margin should be positive for all loadings and for speeds from the minimum power speed to the maximum speed of the aircraft, i.e. when the aircraft is trimmed at any flight speed a rearward force on the control column (of about 15 lb. per applied "g") should be necessary for manoeuvres.

Response to Controls

The pull-up characteristics in forward flight at all speeds from the minimum power speed to the maximum speed should be free from stick fixed divergence. Response to control about all three axes should be effectively instantaneous, i.e. a time history of aircraft movement following a control movement should show no unacceptable lag in response over the whole speed range. The friction in the controls should be low and the force to overcome static friction (with power assistance to controls in operation, where fitted) should not exceed the following amounts:

Lateral	1½ lb.
Longitudinal	3 lb.
Directional	6 lb.

All controls should possess self-centering tendencies to the trimmed position. These requirements shall, if possible, be met without the use of autostabilisation. In addition, it shall be possible without demanding undue skill from the pilot to fly on instruments at all speeds between the maximum for rearward flight to the design cruise speed; for this purpose autostabilisation is permissible.

With autostabilisation inoperative a more limited instrument flight envelope is permissible. This shall not be less than from the minimum power speed to the design cruise speed. If power-assisted controls are installed they shall be duplicated and manual reversion shall be possible. After manual reversion the aircraft shall be flyable in visual conditions at all speeds from the maximum for rearward flight to 80 per cent of the design cruise speed, and on instruments at all speeds between the minimum power speed and 80 per cent of the design cruise speed.

Operational Features

Loading of passengers for all numbers up to the design seating capacity of the aircraft shall be possible, subject only to a reasonable loading condition (e.g. the forward or rear half of the cabin shall not contain less than one quarter of the passengers carried). All reasonable fuel loadings must be taken into account. Equipment shall be applied to power plants, aerodynamic lifting and control surfaces and cockpit glazing, to make possible operation in the most severe icing conditions encountered at all operating altitudes and for periods of up to 1½ hr.

The cockpit layout shall be for two pilots with full dual control. After setting out various cockpit requirements, including an integrated auto pilot flight system, the specification continues: communications equipment shall consist of two multi-channel VHF transmitter/receiver. Intercommunication between operating crew and flight attendant is required, together with provision for a public address system in the passenger cabin. Navigational aids shall consist of a primary aid with pictorial display, a secondary aid, or duplicate primary aid, and i.l.s. receiver (s).

The undercarriage shall be so designed that the aircraft can be manoeuvred into any desired position with no point of the aircraft passing outside an area 400 ft. by 200 ft. It shall be possible to move the aircraft with a single tractor which is rigidly connected to the aircraft and the manoeuvring required shall not be excessively protracted. A means of stopping the rotors rapidly which does not require heavy maintenance shall be provided. Means shall also be provided to prevent Blade-sailing while starting or stopping the rotor in steady or gusty winds up to 50 knots. When required by the operator, it shall be possible to provide means for rapidly folding any fixed surfaces to facilitate parking in confined spaces.

Refuelling

Rapid turnrounds are essential. The time from tanker in position to tanker away employing the normal means of refuelling shall not exceed 5 min. when the tanks are completely filled, while in off-loading fuel the time taken to remove 10 per cent of the fuel capacity shall not exceed 3 min. Pressure refuelling is required together with alternative means of gravity refuelling not requiring special equipment. The pressure refuelling point shall be directly accessible from the ground.

Pressurisation is required so that cabin altitude does not exceed 8,000 ft. and rates of change of cabin altitude do not exceed 300 f.p.m. At least 2 lb. per min. of fresh air per seat is required for passengers and crew at all heights. Cockpit and cabin temperatures should be separately controlled, by the supply of warm air which shall be sufficient to maintain an internal temperature of 70 deg. F. in all operating conditions. Heat generated by radio gear must be dissipated by adequate ventilation. Velocities from warm air diffusers shall not exceed 40 ft. per min. The temperature at head level shall be less than at floor level and the variation in temperature along the cabin at a given height above the floor should not normally exceed 3 deg. F. Individual control of cold air supply should be possible and the maximum velocity of efflux in cruising flights should not be less than 300 ft. per min. At a distance of 200 ft. the overall noise level during landing or take-off should not exceed 90 db. above 2 x dynes/cm.^{2}.

Standard Layout

The cabin width at 25 in. from floor level should permit the installation of seats 16½ in. wide between armrests and with the armrest 2 in. wide and a minimum gangway of 15 in. Seat pitch should be 34 in. minimum and headroom in the gangway should be 6 ft. minimum. The total volume provided for stowage of baggage, registered and unregistered, shall assume a density of 9 lb. per cu. ft. of usable gross volume. In addition to space in the registered baggage compartment stowage shall be provided for unregistered medium-sized suitcases carried by the passengers themselves in racks near the passenger entrance door.

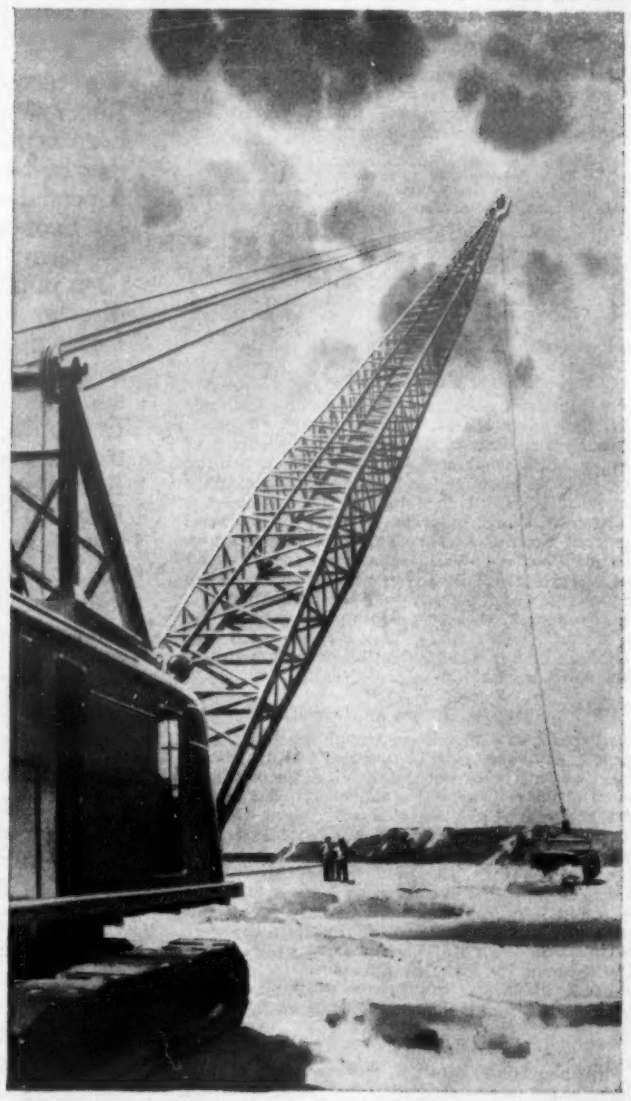
The payload accommodation should be so designed that freight can be carried in the whole of part of the cabin without damage to furnishings. The freight/mail/registered baggage compartment shall have a minimum usable gross volume of at least 6 cu. ft. per seat of the standard layout and by means of movable bulkheads it shall be possible rapidly to expand this volume. Consideration should be given to detachable cargo pods.

ALUMINIUM AT WORK

. . . from the familiar to the less familiar. . .

It is fifty years since aluminium was first used by British engineers in the construction of railway stock. Now it is being used increasingly, all over the world, to give low weight and in turn low running costs. An example where it was used to dramatic effect was in the construction of the Spanish A.C.F.-Talgo train—the coaches are only one-fourth of the weight of conventional steel vehicles! With the lightness of aluminium comes a rugged strength, typified by its use for the jibs of powerful draglines. Aluminium gives these jibs lightness for easy manoeuvrability; it increases their radius of action and gives them strength to take the strain as the drag makes "mountains into molehills". In all kinds of climates this versatile metal is proving its durability in its thousands of uses. Light, strong, durable—that is aluminium at work. Is it working for you?

Aluminium ingot, produced by Aluminum Company of Canada Ltd., is marketed by Aluminium Union Limited. In addition, the Company exports the products of the various fabricating companies of the Aluminium Limited Group.



Aluminium Union Limited

(Incorporated in Canada)

THE ADELPHI, JOHN ADAM STREET, LONDON, W.C.2 *An ALUMINIUM LIMITED Company*

OFFICES, ASSOCIATED COMPANIES AND AGENTS THROUGHOUT THE WORLD

19

COMMERCIAL VEHICLE TEST

*Redesigned Commer Cob Light Van**

INCREASED PERFORMANCE, COMFORT AND BODYSPACE

HAVING established a high reputation for reliability and economy since its introduction in 1955, the Commer Cob 7-cwt. van rises to new heights in its latest form as announced this week. Major points of difference between the earlier Cob and the redesigned version are the replacement of the side-valve engine, which now ends an honourable production run of 25 years for successive Rootes Group cars and vans, by the recently introduced overhead-valve petrol engine, and a useful increase in bodyspace. There are several other changes designed to give improved appearance and performance and greater convenience and comfort for the crew. Among these are increased length between the raised body floor and scuttle, giving more legroom and range of seat adjustment, and deeper seat squabs. The driving compartment now provides improved visibility through a curved windscreen, opening quarterlights in the doors, a central gear lever and a full-length shelf.

The new Commer Cob

The new Cob bears a strong resemblance to the Express delivery van in body styling and in its running units, but is more compact, having a wheelbase 7 in. shorter and body dimensions a few inches smaller all round making for extreme ease of handling in traffic and confined spaces. Operating at the lower loaded weight of 26¼ cwt. with driver of average weight and a 7-cwt. payload, the new Cob has a higher final-drive ratio, giving more economical operation than the Express, and a considerable improvement in performance over the earlier Cob with its side-valve engine. A single rear door, but of greater width, has been retained.

The Cob is powered by the o.h.v. petrol engine of 1,390 c.c. capacity with "square" bore-stroke dimensions of 3 in. With the standard compression ratio of 7 to 1, it develops 43 b.h.p. at 4,000 r.p.m. and 66.4 lb./ft. torque at 1,600 r.p.m. An alternative compression ratio is available for the engine, providing improved power output and specific fuel consumption, for areas where suitable high-octane petrol is freely available. Transmission is through a 7¼-in. single dryplate clutch, the Commer four-speed gearbox with Borg-Warner baulk-type synchromesh on the three highest gears, an open tubular propeller shaft and a semi-floating spiral bevel axle with a gear ratio of 4.778 to 1.

On a 7 ft. 2 in. wheelbase, the Cob has overall dimensions of length 12 ft. 5½ in., width 5 ft. 0½ in. and laden height 5 ft. 1¾ in. The load compartment is 4 ft. 9½ in. long, 4 ft. 6¾ in. wide at maximum and 2 ft. 11¾ in. high; there is 3 ft. 1¼ in. between wheel arches, the body floor height unladen is 2 ft. 1¼ in. and the rear door aperture is 3 ft. 1 in. wide by 2 ft. 6¾ in. high. Ground clearance laden is 7 in. Weight in licensing order is 17¼ cwt.

The Cob has all the comfort and convenience of a private car. Standard equipment includes twin self-parking windscreen wipers, flashing direction indicators, interior sun visor, full-width chromium-plated bumpers and hub covers and built-in ventilation. The comprehensive range of optional additional items includes passenger seat, heater, radio, roof rack, radiator blind and safety belts. Use of the new Hillman Minx underframe has permitted excellent dust and draught proofing, with pendant pedals giving a clean floor line. The new independent front suspension units, using coil springs, and direct-acting telescopic dampers all round were found to give a firm ride and good roadholding over a wide variety of surfaces covered during our test.

Difficult Conditions

The test was run under difficult conditions for braking tests as the roads were wet throughout a mild and showery day. The brakes were responsive to light pedal pressures and in a number of emergency stops from 30 m.p.h. on the open-texture type of tarmac surface, Tapley meter readings between 75 and 85 per cent were recorded despite wet roads. Excellent handbrake efficiency was also evident in stops from around 20 m.p.h., when Tapley readings obtained were 36-38 per cent. Our brake-fade check, comprising a ¼-mile run down Titsey Hill with the gear disengaged and holding the speed down to 18-20 m.p.h., showed the Cob to be virtually free of this trouble.

A good steering lock, which gives a turning circle diameter on the wheeltracks of 30 ft. 6 in., and lively acceleration provide a very useful traffic performance. Acceleration figures were obtained in four runs, two in each direction, on fairly level road and average times recorded were 4.5 sec. from rest to 20 m.p.h., 8.8 sec. to 30 m.p.h. and 14.2 sec to 40 m.p.h. In quieter driving, it was found that the engine would pull away smoothly from speeds as low as 10 m.p.h. in top gear, requiring an average of 5.5 sec. to reach 20 m.p.h. and 11.6 sec. to reach 30 m.p.h. All results were obtained with the van fully loaded and at this weight the top speed was judged to be well over 60 m.p.h.

Fuel consumption checked over our 15-mile out-and-back route on A25 between Limpsfield Common and Riverhead, with standard-grade fuel in the test tank, gave a result just short of 37 m.p.g. The vehicle was not nursed to achieve this f[illegible] gears and accelerator being used freely to keep up a good pace, as is evident in an average speed of 31.6 m.p.h. over an undulating route that includes the villages of Westerham, Brasted, Sundridge and Bessels Green and a turnabout at Riverhead. This sort of result should be quite normally achievable on longer-distance journeys. Local delivery work was simulated by a second run making four stops per mile with smart acceleration to speeds around 30 m.p.h. in between stops. At every odd-numbered stop the engine was switched off for a minute or so and at alternative stops it was allowed to idle. In five miles of this work the fuel consumption recorded was 27.1 m.p.g.

TEST RESULTS AT A GLANCE

Vehicle Details

MAKER: Commer Cars, Limited, Luton, Bedfordshire.

TYPE: Cob light van.

ENGINE: Commer four-cylinder overhead-valve petrol; bore 3 in. (76·2 mm.), stroke 3 in. (76·2 mm.), displacement 85 cu. in. (1,390 c.c.), compression ratio 7 to 1; 43 b.h.p. at 4,000 r.p.m., 66·4 lb./ft. torque at 1,600 r.p.m.

TRANSMISSION: **Clutch,** single dryplate 7¼ in. (184·1 mm.) dia., 42·4 sq. in. (274 sq. cm.) lining area; **gearbox,** four-speed synchromesh, ratios 3·567, 2·47, 1·49 and 1 to 1 forward, 4·76 to 1 reverse; **driveshaft,** Hardy Spicer open tubular with needle roller bearing universals; **rear axle,** semi-floating spiral bevel, ratio 4·778 to 1.

BRAKES: Lockheed hydraulic 8 in. (203 mm.) dia., 92 sq. in. (593·6 sq. cm.) total lining area.

TYRES: 5.00-15 four-ply.

WHEELBASE: 7 ft. 2 in. (2·184 m.).

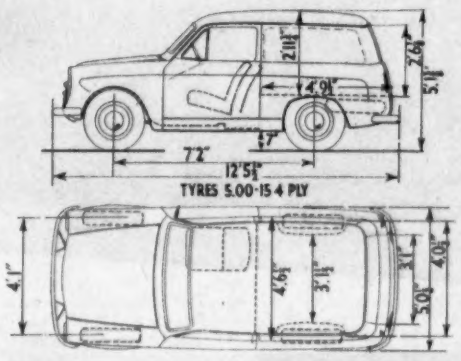
WEIGHT: In licensing order 17¼ cwt. (876·3 kg.), in kerb trim 18¼ cwt. (927·1 kg.)

PRICE: Complete in primer £420 plus £64 15s. 4d. home purchase tax. Finish painting in one colour £10.

Test Results

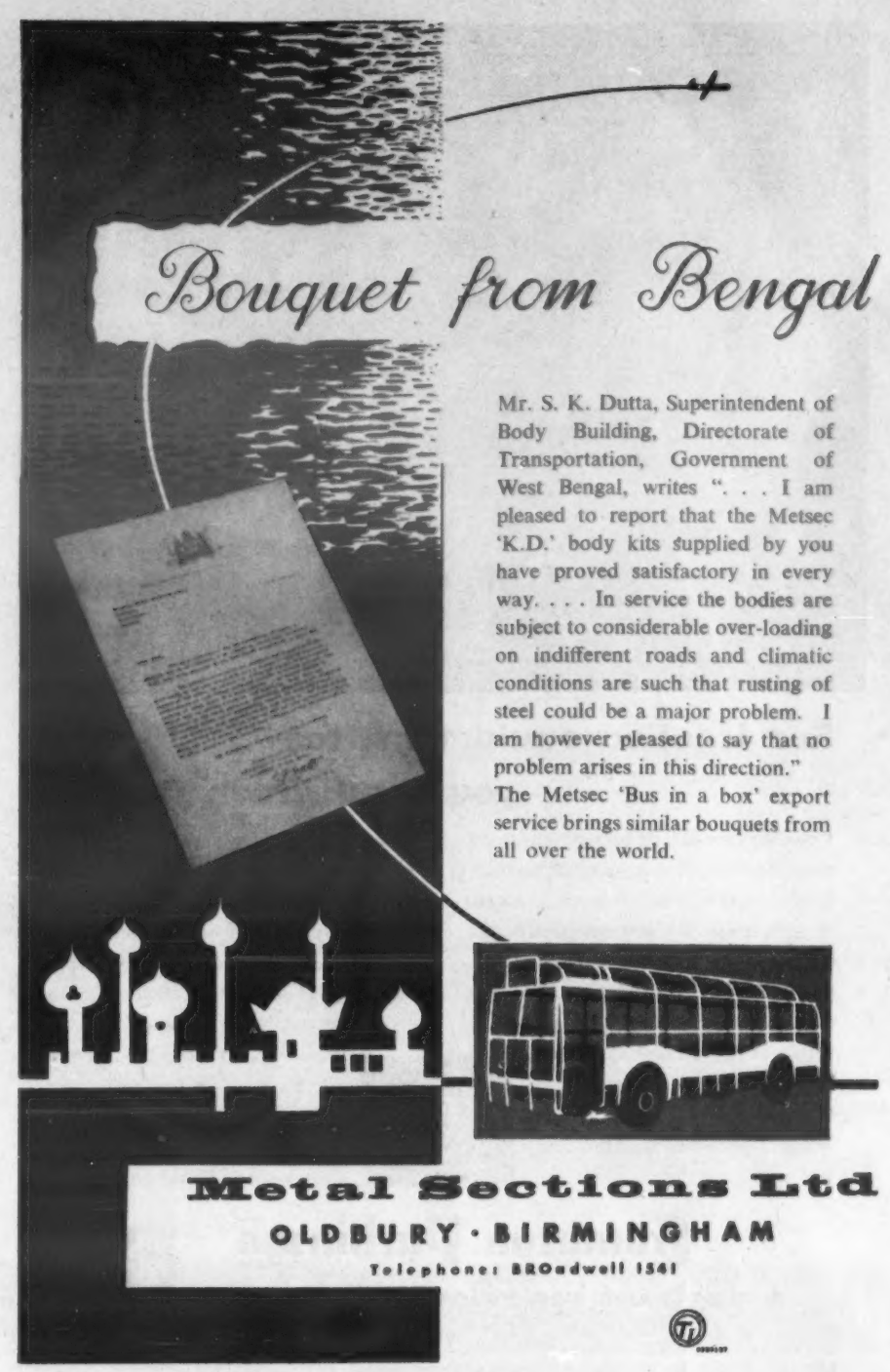
ROUTE: MODERN TRANSPORT standard route.
CONDITIONS: Mild and showery.
RUNNING WEIGHT: 1 ton 6¼ cwt. (1,346 kg.), including crew.
PAYLOAD: 7 cwt. (356 kg.).
FUEL CONSUMPTION: (I) Continuous running over 15 miles, 36·94 m.p.g. (13·1 km. per litre) at 31·6 m.p.h. (50·5 k.p.h.). (II) Making four stops per mile over 5 miles, 27·1 m.p.g. (9·6 km. per litre)
GROSS TON/M.P.G.: (I) 49 (17·62 tonnes/km./litre). (II) 36 (12·95 tonnes/km./litre).
PAYLOAD TON/M.P.G.: (I) 13 (4·68 tonnes/km./litre). (II) 9·5 (3·4 tonnes/km./litre).
TURNING CIRCLE: 30 ft. 6 in. (9·3 m.) wheeltrack, 32 ft. (9·75 m.) sweep.
ADJUSTMENTS DURING TEST: None.
ACCELERATION:
Averages of four runs through gears:
0-20 4·5 sec.
0-30 8·8 sec.
0-40 14·2 sec.
Top gear only:
10-20 5·6 sec.
10-30 11·6 sec.
BRAKING: Roads too wet to provide useful figures in measured stops. Tapley meter readings up to 85 per cent. Handbrake only gave Tapley figures 36-38 per cent.
ESTIMATED TOP SPEED: Over 60 m.p.h. (96 k.p.h.).

There is more legroom and comfort for the crew and, right, more space for the load



Drawings of the new Commer Cob giving principal dimensions

* No. 443 in the MODERN TRANSPORT series of road tests.


Bouquet from Bengal
Mr. S. K. Dutta, Superintendent of Body Building, Directorate of Transportation, Government of West Bengal, writes ". . . I am pleased to report that the Metsec 'K.D.' body kits supplied by you have proved satisfactory in every way. . . . In service the bodies are subject to considerable over-loading on indifferent roads and climatic conditions are such that rusting of steel could be a major problem. I am however pleased to say that no problem arises in this direction."
The Metsec 'Bus in a box' export service brings similar bouquets from all over the world.
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For traction equipment, too—

you need green fingers

Given the same soil, the same fertilisers, the same sunshine and rain; using, apparently, identical methods; two gardeners do not get the same results. One gardener grows perfect blooms in profusion but, try as he will, he can never tell you exactly how he does it. We say he has green fingers. But what really seems to have happened is that much he has learned over the years has become so completely part of himself that he does the right thing instinctively. Something of the same kind happens in engineering—with an entire works playing the gardener. It is not a question of craftsmanship in the old sense, but of corporate and often sub-conscious knowledge. In a works that has been concerned with equipment for electric traction for years, the right decision seems 'natural', being based on knowledge that is so much a part of past experience that it is taken for granted. This is one reason why a name with a long history can still mean so much.

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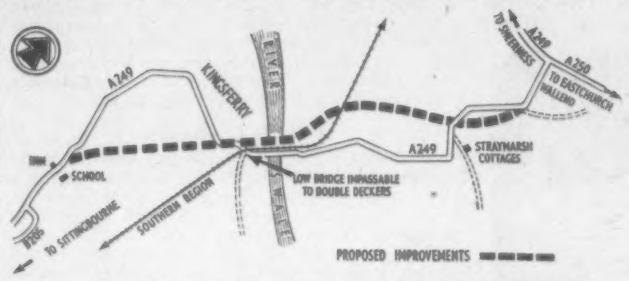
AN IMPORTANT LINK

Work on New Kingsferry Bridge Started

IN weather that was anything but kindly, even if it had not deterred the guests from attending, Mr. G. R. H. Nugent, Joint Parliamentary Secretary, Ministry of Transport, deputised for his Minister on January 24 and formally inaugurated work on the new bridge at Kingsferry which is to link the Isle of Sheppey with the mainland. The ceremony took the form of opening a valve which, in turn, started a pile driver. As already indicated in MODERN TRANSPORT the estimated cost of the scheme, for which the consulting engineers are Messrs. Mott, Hay and Anderson, is £1,165,386.



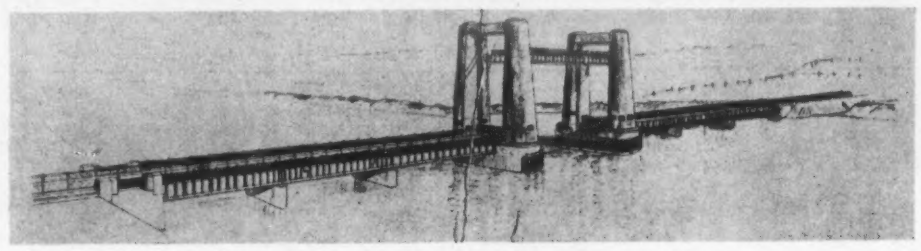
The new bridge at Kingsferry and the associated road improvements

Contributors to this sum are various. The British Transport Commission has agreed to provide £122,500 and the Bowater Paper Corporation offered £50,000 provided that work started by December 31, 1957—a condition which was fulfilled. Thereafter the South Eastern Gas Board and the Sheppey Water Board will contribute £27,710 in respect of works required by them, leaving a balance of £965,176. The Ministry of Transport will bear £723,882 of this and the Kent County Council the remainder. The approach roads totalling nearly three miles and including a new bridge over the railway on the Sheppey side have been designed by the Kent county surveyor, Mr. E. W. H. Vallis, and will be carried out by him with direct labour. The main contractor for the bridge is John Howard and Co., Limited, and the work is expected to take 2¼ years.

In a speech welcoming Mr. Nugent the chairman of Kent County Council, Sir William Nottidge, stressed the great longing there had been for the establishment of a surer link between island and mainland. The Parliamentary Secretary in performing the ceremony remarked that it would be the highest lift bridge built in Britain for 25 years and he thought that significant at a time when there was so much emphasis upon improving communications.

The chairman of the county roads committee, Sir Leslie Doubleday, had indulged in some historical research and suggested that the last thing anyone would have wanted in 832 was a bridge since the island was in Viking occupation. There had been various accidents to the bridge, several of them of recent memory, but in 1922 the complete demolition by a vessel of one of the piers had caused a closure lasting eleven months. To tide over the period of waiting for the new bridge the Kent County Council had taken various steps to prevent further damage or to minimise inconvenience if such damage occurred. These measures had been generally appreciated and particularly effective as regards the protecting fendering. [The steps taken at a cost of some £14,500 included provision of this protective timber fendering, marker posts in the main buttresses and a retractable footbridge.]

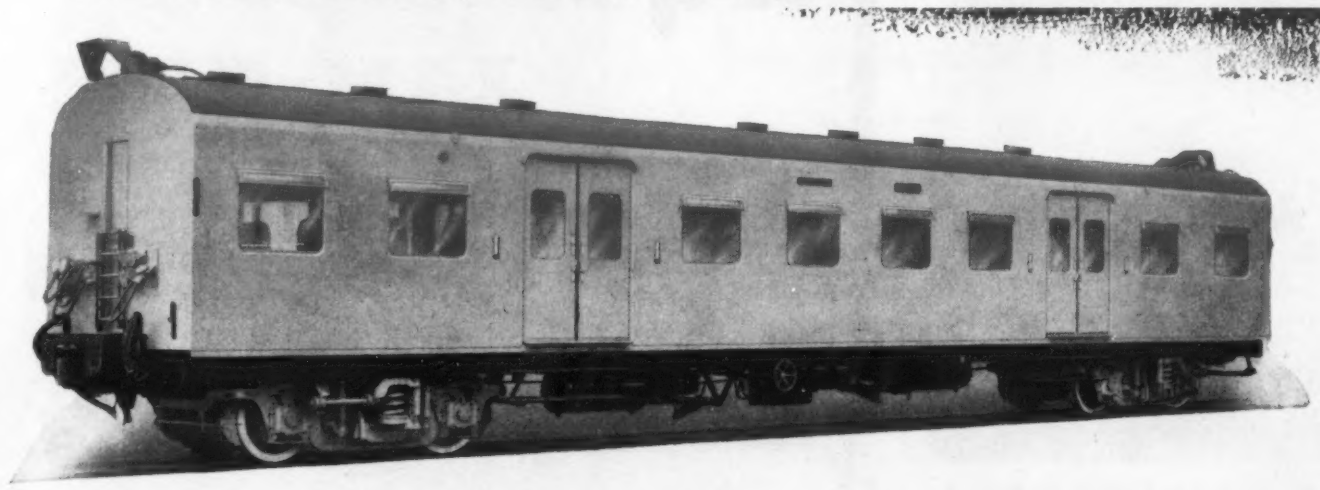
The lifting span of the new bridge will rise vertically to a height of 95 ft. above high water mark. The overall width of the bridge will be approximately 50 ft. and there will be a 24 ft. roadway, a 6 ft. footpath and one railway track. The lifting mechanism will be electrically driven and the controls will be electrically operated.



Artist's impression of the new Kingsferry Bridge across the River Swale

Maidstone and District Motor Services, Limited, should derive some benefit from the new bridge apart from the elimination of the delays associated with the present bridge since, owing to a low railway bridge south of Kingsferry, it has not been possible to use double-deck buses on through journeys between the mainland and the island. When it has been necessary to transfer such buses to or from Sheppey use has been made of a private road via the paper mills.

COACHES FOR RAILWAYS IN AFRICA . . .



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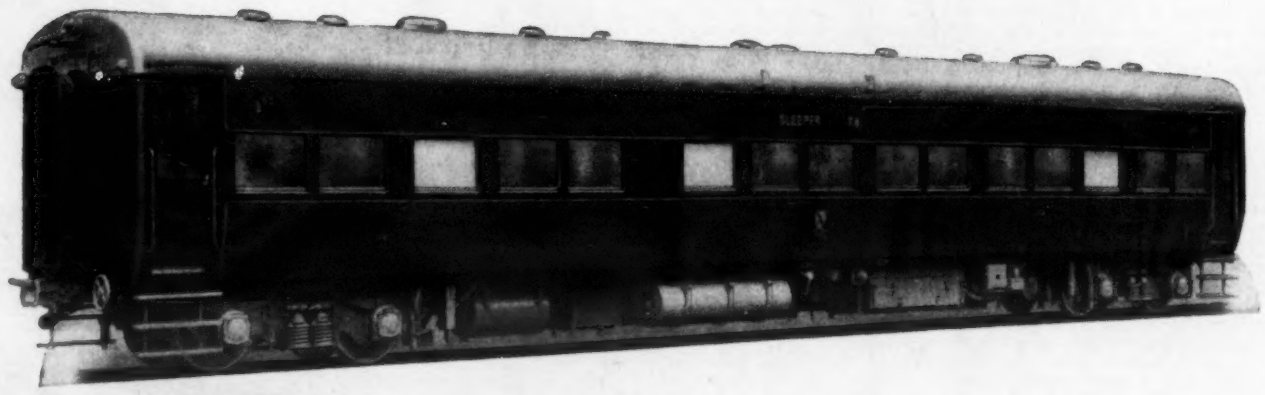

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TEAMWORK ON THE RAILWAYS

Sixth Conversazione of P.W.I.

MORE applications than ever before were made to attend the sixth annual conversazione of the Permanent Way Institution which took place in the British Transport Commission headquarters on the evening of January 25. Guests, members and their ladies were received by the president, Mr. J. Ratter, and Mrs. Ratter. Although the layout had been somewhat rearranged—a fact mentioned by the president in his speech—the occasion largely took its now customary form. The music which accompanied the presidential reception was followed by speeches by Mr. Ratter, Mr. F. Hanks (member, B.T.C., and chairman, Western Area Board) and Mr. H. W. Clarke (vice-president for England, P.W.I., 1957).

Thereafter there was a wide range of activities apart from the innumerable opportunities for conversation. Three film shows consisted mostly of British Transport Commission films including *Making Tracks, A Century of Buses, Any Man's Kingdom, Overhaul, Four Back Rooms, Journey Into Spring, Precast Concrete Sleepers* and *The England of Elizabeth*. Dancing to the Mayfair Dance Orchestra was interrupted only by a display of magic by John Peake and in other rooms there were billiards, snooker, darts and table tennis. There is usually an exhibition of some railway feature and on this occasion it took the form of a series of 20th century posters intended to promote travel and issued by British Railways and London Transport and their predecessors.

Guests Welcomed

In his address the president said there was a common bond between the members of the Permanent Way Institution that not every institution had. First of all—perhaps most important—in the institution there was every possible type of person and so far as it was concerned they were all one. This started at the bottom, or perhaps at the top, with the platelayer, and there was one very distinguished member of the P.W.I. who was a member of the British Transport Commission, and was there tonight.

His main duty was, of course, to welcome them all and also the guests. They had with them three members from the British Transport Commission—Sir Landale Train and his lady, Mr. James Watkins, and their guest, Mr. R. F. Hanks, also Mr. John Ryan, who was a member of the Western Area Board, and other distinguished guests; many members of the general staff and the central staff of the B.T.C. and the chief civil engineers from all regions. Mr. Ratter had had telegrams from Dr. den Hollander of the Netherlands Railways, Sir Allan Quartermaine, and other friends who could not be with them, but he was very glad to see Colonel Wilson and Brigadier Langley, of the Ministry of Transport, Mr. Cuperus from the Netherlands and M. Hannoyer from French Railways.

"We felt this year that we should give the conversazione a Western Region flavour. The reason is that we are this year going to hold our summer convention at Weston-super-Mare. Mr. Hanks started his life at Swindon, but left the railway for other forms of transport for a while. However, he decided that there was something in it he couldn't resist, and came back. Everyone who knows him is very glad that he did. I for one feel that his downright common-sense views are a very good asset to us."

Mr. Hanks said that today we must think of the iron road as the conveyor belt of industry. As our roads become more and more congested—and they would—he thought the light was going to dawn in this country and the public was going to wake up to the fact that the railways were not just to cater for national emergencies but that they were the true and the only answer to the dual problems of road congestion and long distance haulage.

"Because your summer convention is being held in the parish of the Western Region. I was asked to give my comments tonight a western flavour. I do wonder if there is a more lovely stretch of permanent way than our line, say, from Teignmouth to Dawlish Warren; but it is a very troublesome line as well. I have seen men wrestling with the elements down there up to their waists in water, trying to retain their ballast.

"Like many of you, I have recently been reading that new book on the G.W.R.'s first chief civil engineer, Isambard Brunel. I believe he was actually known as the chief engineer. What a tremendous chap he was! I would just say this: When you have been disappointed (and I have seen you up against it on occasions) do remember the spots in which dear old Brunel used to get himself, and how he extricated himself."

Value of Teamwork

"Sometimes I have read and re-read the tremendous amount of paper work which this great British Transport Commission produces, and I find a tremendous relaxation in leaving it all and climbing up on the footplate and going for a run. It does bring one face to face with what railways are about. It is then that I am most deeply impressed by what this railway teamwork really means—the permanent way on which we run, the engine and the rolling stock, the signals, the whole complicated scheme of operating, the preparation of timetables, how, mysteriously, your wages find themselves in the pay packets at the end of the week; and, above all (touching wood) the great record of safety which is the envy of the whole world. To me all these things, and more, constitute teamwork, which I believe is unparalleled in any other industry in the world.

"Dare I mention in this company two words: work study. We hear and read so much about this but when all is said and done it is really only planning of tasks properly and carrying out the tasks, and so I do urge you to give it every support you can. I see in this more wages, better work, and less effort. I am sticking my neck out in saying that in the world of permanent way engineering there is still room for development.

To say that the railways were up against it in regard to road transport, and air transport as well, was putting it mildly, and as Sir Brian Robertson wrote in his New Year message:—'1958 is likely to be a testing year for our country and its economy. It will also be a year of testing for us. There is nothing to worry about if we pull together, but plenty to worry about if we don't.' There it was in a nutshell and whatever might be the nature of their work they could make that extra effort that was going to mean a lot.

Mr. H. W. Clarke expressed the warm thanks of all to Mr. Hanks and hoped that they would soon be seeing him again.

The Study of Transport

READERSHIP AND RESEARCH FELLOWSHIPS AT OXFORD

THE Institute of Transport has sponsored during the past two years a project to establish at the University of Oxford readership and research fellowships in the economics and organisation of transport. A substantial sum of money was required to initiate the project and the council of the Institute has now announced with satisfaction that a sufficient sum was promised by associations and individual undertakings in or connected with the transport industry, and by users of transport, to enable the Institute to make a formal offer. This offer was welcomed by the Hebdomadal Council of Oxford University and the Institute has completed a covenant to transfer the donations to the university over the next 10 years. Notice of the proposed endowment was duly published in the *University Gazette* and Congregation approved its acceptance on January 28. It is hoped that the final stages will be completed on February 11. The scheme in its final form will cover not only a readership but also the establishment of research fellowships (it is hoped at least two) in the colleges; provision is also made for the making of grants to other members of the university to encourage and advance the study of the economics and organisation of transport.

Project Long Overdue

The whole project was conceived by the Institute in the belief that the time was long overdue in this country when the vast and varied problems of transport economics and organisation should receive much greater recognition than hitherto as subjects for university research and teaching in this country. Transport providers and transport users have been becoming more and more aware that there was a multitude of problems associated with transport which profoundly affected national prosperity and which were of great economic and social significance, and called for disinterested study. The view was taken by those who initiated and sponsored the project that if a readership in transport, supported by research fellowships, could be established, great benefits would eventually accrue, not only in the gradual building up of an authoritative body of knowledge and opinion on the complex problems of transport, which would give a surer foundation to Government and commercial policy than had existed in the past, but also in more and better teaching of the subject which would appeal to able young men who might thus be attracted to transport as a career.

It was decided that there would be special advantages in securing recognition of the subject of transport at the University of Oxford as one of the two senior universities, as a preliminary to promoting a more lively interest in transport at other universities throughout the country. The hope is that the first appointments to the readership and fellowships will be made with effect from the next academic year, i.e. October, 1958. Colleges are to be invited, in consultation with the Board of the Faculty of Social Studies, to appoint the research fellows. The reader, who will hold office for seven years and be eligible for re-election, will be appointed by an electoral board consisting of the Vice-Chancellor, the Professor of Economic Organisation, the Drummond Professor of Political Economy, and representatives of the Hebdomadal Council, the General Board of Faculties and the Board of the Faculty of Social Studies. The readership may be held with a stipendiary fellowship at a college.

Institute Responsibility

The donors have agreed that the actual out-of-pocket expenses incurred by the Institute in sponsoring the scheme should be reimbursed to it from the fund, but the work generally of promoting it and building up the amount required has been and continues to be shouldered by the council of the Institute as part of the general activities of the Institute.

The contributors to the endowment fund are:

Bristol Aeroplane Co., Limited; British Electric Traction Co., Limited; British Plaster Board (Holdings), Limited; British Timbers, Limited; British Transport Commission; B.T.R. Industries, Limited; Calders, Limited; Canusa, Limited; Chamber of Shipping of the United Kingdom; Charrington and Co., Limited; Courage and Barclay, Limited; Crosse and Blackwell (Holdings), Limited; Distillers Company, Limited; Dock and Harbour Authorities Association; Dunlop Rubber Co., Limited; English Electric Co., Limited; Esso Petroleum Co., Limited; F. T. Everard and Sons, Limited; Goodyear Tyre and Rubber Co. (Great Britain), Limited; Arthur Guinness, Son and Co., Limited; Imperial Chemical Industries, Limited; J. Lyons and Co., Limited; J. Stone and Co. (Holdings), Limited; Joseph Rank, Limited; Leyland Motors, Limited; Littlewoods Mail Order Stores, Limited; Mobil Oil Co., Limited; Road Haulage Association; Rowntree and Co., Limited; Schweppes, Limited; Shell-Mex and B.P., Limited; Tate and Lyle, Limited; Transport Development Group; Tube Investments, Limited; Unilever, Limited; United Glass Bottle Manufacturers, Limited; and Watney Combe Reid and Co., Limited.

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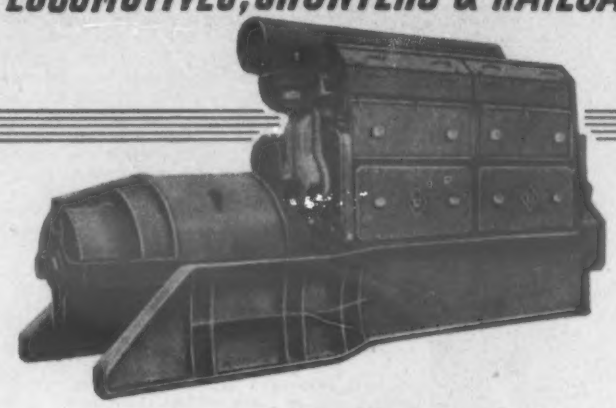

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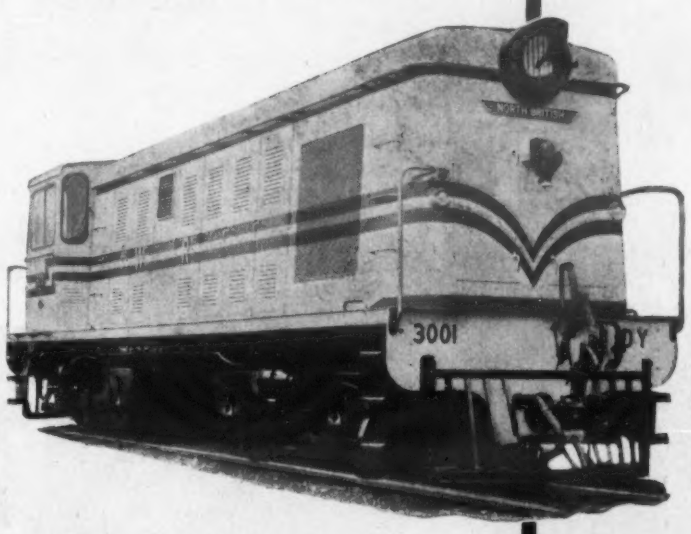

B-B type diesel-hydraulic locomotive for Indian Government Railways (Courtesy of North British Locomotive Co. Ltd.).

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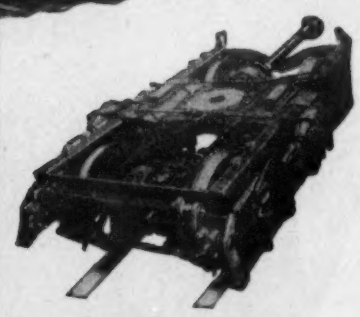

Bogie of a North British diesel-hydraulic locomotive, showing cardan shaft with Hardy Spicer universal joints, coupled to final drive reduction gearing over the drive axle.

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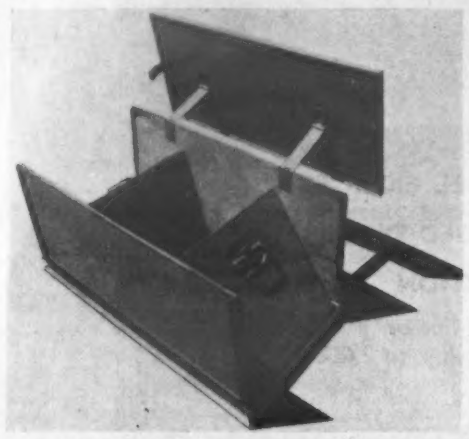
SMALL COLLAPSIBLE CONTAINER

Sturdy New Marque

LAST week a new design of collapsible container, the Retemba, was demonstrated in London to possess great strength and durability. It is constructed as an integral unit from heat-treated aluminium alloy extrusions and weather-proofed laminated timber. There are no loose pieces. It has automatic lock devices, simple and speedy in use. The lid can be sealed for customs purposes. The Retemba can be stacked either when erected or collapsed. It is claimed to have a long life, it has a low weight in comparison to its volume, takes up only a small storage space, and can be quickly erected or collapsed; in the latter position it takes up about 17 per cent of the space it occupies when erect.

It's already widely used in Sweden and elsewhere in Europe; it was introduced originally to solve ammunition packing problems for Bofors but



The Retemba collapsible container showing the method of folding it to shut into 17 per cent of its erected capacity

has been adopted by users of many other commodities. In Sweden the Swedish Railways states that Retemba containers can stand up to 100 journeys whereas all-metal containers appear to need major repairs after 15 to 20 journeys. Manufacturing and distributive rights in the United Kingdom are now owned by Warwick Production Co., Limited, Birmingham Road, Warwick. This firm can now offer delivery in 10 to 12 weeks. Probably they will also be available on a hire basis.

Laminated Timber Panels

The panels are constructed from a strong laminated timber specially bonded and treated to withstand rough usage and exposure in all weathers. The frame is fabricated of corrosion-resistant strong, fully heat-treated, aluminium alloy extrusions, with the base providing positive stacking—whether extended or collapsed. The interior

(*Continued at foot of next column*)

B.R. PROTOTYPE COACH

Birmingham-Built Open Saloon

THE last of 14 prototype passenger coach chassis has been built to British Railways basic dimensions and standard design by the Birmingham Railway Carriage and Wagon Co., Limited, Smethwick; it is a second-class open saloon and is now in service on the Southern Region. The builder having been given considerable freedom with the interior design, has introduced features to provide a decorative and comfortable coach and to this end has been greatly assisted by Sir Hugh Casson, whose interior arrangement and decor have been adopted. The coach retains the standard arrangement of two saloons divided by a central gangway with vestibule and lavatory at each end. The seat spacing has been designed to give increased comfort and the coach accommodates 39 passengers.

Olive ash veneers are used for the interior finish of passenger saloons and compare favourably for appearance and wear with the more recently developed synthetic finishes. The seats are two-passenger units on one side of the gangway and are single on the other; each has been designed to give the passenger individual comfort by providing a separating central armrest. Upholstery is in foam rubber throughout and is a green and black material from a new range by Tibor, Limited. At the touch of a button the passenger may select an upright or reclining position. Readily detachable tables and useful storage and luggage space are other attractive features.

Double-Glazed Windows

The shell of the vehicle has been specially treated and double-glazed windows incorporated to give quiet running, increased insulation and avoid condensation. Continuous steam heating is provided along both sides of the saloons and the apparatus is enclosed by decorative grilles. The vestibules and lavatories are also heated. The lavatories are designed with the aim of tidiness and simplicity of maintenance; they are finished in laminated plastics and with thermoplastics tiled flooring suitably coved. A partially recessed panel picked out in the colour scheme contains fluorescent lighting, a mirror, combined interleaved towel

(*Continued from previous column*)

of the container has sheer sides free from obstructions. All fittings are housed to permit the full internal capacity to be used. The fittings—handles, clasps, hinges—are of cadmium-plated steel, the clasps being of spring steel. At each end of the container is an automatic clip-fastener, which incorporates a quick-release pull-toggle. The fasteners permit an effective seal.

Two sizes of Retemba are available, but the range can be extended to meet almost any requirement. The sizes quoted are RT4, 30 in. by 15 in. by 15 in. inside (30¾ in. by 15⅞ in. by 16¼ in. overall), giving 3.9 cu. ft. capacity and a tare of 29 lb., or RT6, 30 in. by 22½ in. by 15 in. inside (30¾ in. by 23⅜ in. by 16¼ in. overall), giving 5.8 cu. ft. capacity and a tare of 37 lb. The plywood used in each case is of 10 mm. thickness.

dispenser, and trigger-operated ashtrays. A distinctive arrangement is the wash basin fitted with a spray nozzle tap.

The vestibules are finished in light mahogany and the finishing of the centre gangway matches the saloon interior; a map is provided in the centre gangway for the convenience of passengers. The lighting in the main saloon is provided by continuous fluorescent tubes housed in the ceiling and illuminating the saloon through a continuous louvred aperture. Fluorescent tubes continue across the centre gangway illuminating it through a horizontal louvred opening in the inner ceiling. The luggage racks are of tubular construction finished in anodised aluminium providing ample accommodation.

Ventilation and Windows

Ventilation is provided in the roof by extractors drawing air through a continuous series of slots in the centre fluted ceiling panelling. Sliding ventilators are also fitted over the windows. Spring-controlled blinds of decorative hair material are provided at bodyside windows. A special type of spring-controlled ashtray is provided housed in the window sills. The tables, also of olive ash, are covered with plastics of a special design and fitted with elegant stainless steel legs. The floors of the saloon are covered with a granite-coloured linoleum whilst those of the gangways and lavatories are

A second-class prototype coach built by the Birmingham Railway Carriage and Wagon Co., Limited, recently placed in service on the Southern Region of British Railways

covered with decorative plastics tiling. The exterior of the coach is in accordance with the standard livery colouring and the numerals for the carriage numbering are of modern design. The proportions of the bodyside windows have been amended.

S. N. Bridges and Co., Limited, has commissioned a new sales and service depot at 15 Quay Street, Manchester, 3. Telephone numbers are Deansgate 4928 (service) and 4929 (sales).

BOOK NOTICES

Trade and Technical

PORT OF LONDON GUIDE. (London: Coram (Publishers), Limited, 20-21 Took's Court, E.C.4. Price 25s.) A biennial publication, this guide includes chapters outlining the nature of most services provided in the Port of London, but its chief value will probably prove to be the directory and maps of wharf locations and particulars of docks.

* * *

KEMPE'S ENGINEERS YEAR-BOOK for 1958. (London: Morgan Brothers (Publishers), Limited, 28 Essex Street, Strand, W.C.2. In two volumes, price 82s. 6d., postage 2s. 6d.) Once again this classic work of reference has been revised and expanded under the direction of the editor of *The Engineer*, to provide ready answers to a still wider range of queries on engineering topics.

* * *

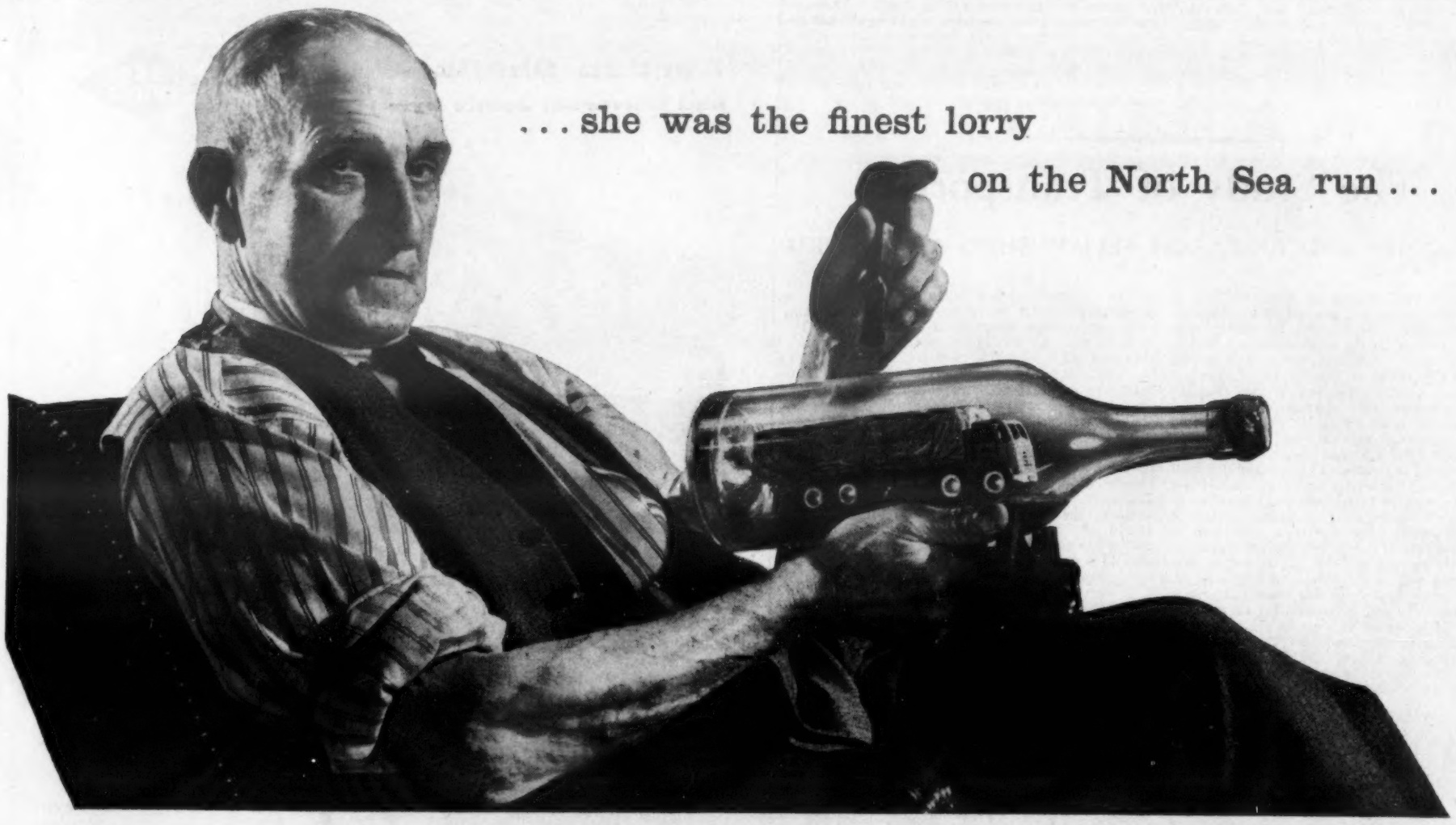
HIGHWAY HOLIDAYS, 1958 (Dunstable, Beds: Index Publishers, Limited, Church Walk. Price 2s. 6d.) Originating as a section of the *A.B.C. Coach Guide*, this publication last year appeared with an individual title and met with even greater success than it had had as a separate supplement. This year's special articles are by Mr. H. Bottomley, the Ribble general manager, on British tours operation and Mr. V. Maitland, director of Excelsior European Motorways, who deals with coach tours on the Continent. The main body of the book sets out the tours at home and abroad of more than 50 operators and organisers.

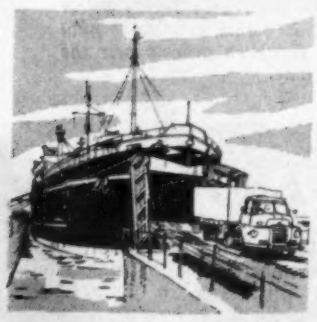
* * *

HOTELS AND RESTAURANTS IN THE BRITISH ISLES, 1958. (London: British Travel and Holidays Association, 64-65 St. James's Street, S.W.1 Price 6s.) While this handy volume does not profess to include every hotel in Great Britain and Northern Ireland, it nonetheless manages to list some 4,000 hotels and restaurants and most cities, towns and villages are credited with one or more establishments, together with brief notes upon historic and other features. Produced primarily for tourists and holidaymakers, it is also a most useful book for those who travel on business to have close at hand. We could wish that the rather small-scale maps at the back were replaced by street plans, useful adjuncts which are missing only too often from such publications.

* * *

PASSENGER TRANSPORT YEAR BOOK, 1958. (London: H. F. Maynard, Limited, Avenue Chambers, Vernon Place, W.C.1. Price 30s.) The annual appearance of this useful book has become a matter of special interest in that one never knows what new feature will have been found for inclusion. On this occasion a foreign section has been added to the review of public service vehicles and, while no pretence is made of having yet attained a balance in this regard, a start has been made and we shall watch its development with interest. Another new feature deals with diesel railcars. An excellent idea in itself, although we are less happy about the decision to give it the title "Buses on Rails" since a considerable proportion of the work carried out by multiple-unit sets hardly falls within that category. The lists of operators have again been extended, that for New South Wales having grown remarkably.





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SOCIAL AND PERSONAL

Death of Mr. R. W. Sewill

WE regret to record the death of Mr. Roger W. Sewill, C.B.E., M.A., who was director of the Road Haulage Association until 1948, when he resigned that appointment to join Aims of Industry as director. Mr. Sewill, who was a foremost opponent of nationalisation, had been a founder member of the original Road Haulage Association in 1931 and was the first chairman of the road side of the erstwhile Road and Rail Central Conference which was to implement the road-rail agreement of 1939. Mr. Sewill was 65. (A portrait accompanies a review of his career on page 9.)

* * *

Mr. T. E. Potts has been appointed a managing director of the British Oxygen Co., Limited.

* * *

Mr. W. Hargreaves has been appointed to the post of assistant district passenger superintendent, Leeds, North Eastern Region, B.R.

* * *

We record with regret the death of Mr. J. F. Cameron who was engineer and general manager of Northampton Corporation Transport from 1915 to 1945. He was 74.

* * *

The death, apparently through suicide, occurred at Miami on January 25 of Mr. Robert R. Young, aged 60, chairman of the New York Central Railroad.

* * *

Mr. R. D. Gardiner, assistant divisional motive power superintendent, Derby, has become assistant divisional traffic manager, Nottingham area, London Midland Region, B.R., in the new regional organisation. Mr. Gardiner joined the former L.N.E.R. at Stratford works in 1928 as an apprentice. After experience in the electrical engineer's department and at various motive power depots he took charge of the locomotive depot at Southend. He joined the Royal Engineers as a sapper in 1940 and was commissioned. He served for a period at the War Office and in India, Iran, Lebanon, Sicily and Italy, and was demobilised in 1946 with the rank of lieutenant-colonel and was twice mentioned in dispatches and awarded the M.B.E. (Military). On returning to the railway, Mr. Gardiner served as locomotive shedmaster at Colchester and at Cambridge and was appointed assistant district motive power superintendent, Cambridge, in 1947. He became acting d.m.p.s. at Plaistow in 1949 and at Cambridge in 1953. His appointment as productivity assistant to the motive power superintendent, Eastern Region, took place in 1954 and later in that year he became assistant divisional motive power superintendent, Derby.

Mr. R. D. Gardiner

* * *

Mr. C. L. Edwards, M.I.Mech.E., northern area manager of C.A.V., Limited, has retired after 45 years with the company.

* * *

Mr. H. Kinsey has been appointed district commercial officer, Liverpool Street, Eastern Region, B.R.

* * *

The 17th biennial congress of the International Chamber of Commerce will be held in Washington in 1959 from April 18 to 24. The last I.C.C. congress in the United States was in 1931, also in Washington.

* * *

Sir Edward Boyle, Bt., M.P., Parliamentary Secretary, Ministry of Education, is to be the speaker at the informal luncheon of the Institute of Transport arranged for February 4, at the Connaught Rooms, London.

* * *

Mr. T. Tulloch, docks manager at Fleetwood, has been appointed shipping and port superintendent at Parkeston Quay, B.T.C., in succession to Mr. S. A. Claydon, recently appointed Continental traffic and shipping manager, Eastern Region, B.R.

* * *

Three new appointments have been made to the board of the Decca Navigator Co., Limited. They are: Messrs. H. C. Lambert, chief accountant to the Decca Group since 1947 and now appointed group controller; G. Hawker, B.Sc., commercial manager of the navigator company since September, 1951; and G. L. Coles, manager of the marine division since 1947.

* * *

At a dinner held by the Transportation Club on January 21 and presided over by Major-General G. S. Szlumper, General Sir Nevil Brownjohn, G.B.E., K.C.B., Quartermaster-General to the Forces, was the guest of honour and gave a short address on his problems of transport. Mr. Harold Wilmot proposed a vote of thanks on behalf of members.

* * *

The London Midland Region of British Railways announces the following staff appointments:

Mr. L. A. Metcalf, to be assistant (administrative) to general manager, from January 1.
Mr. R. Tildesley, to be assistant divisional traffic manager, London.
Mr. R. D. Gardiner, to be assistant divisional traffic manager, Nottingham.
Mr. J. Pollard, to be district traffic superintendent, Stoke.
Mr. A Higginson, to be district traffic superintendent, Barrow.
Mr. G. W. Parkin, to be electric traction engineer, London.

* * *

Mr. C. V. Barrett, who has been appointed district operating superintendent, Norwich, Eastern Region, B.R., in the new Eastern Region traffic organisation, was previously assistant district operating superintendent, Cambridge. Mr. D. Beattie, the new district commercial officer at Norwich, comes from the London Midland Region at Derby, where he was assistant district commercial manager.

* * *

Mr. R. C. Hunt, who has held the post of chief engineer, Trent Motor Traction Co., Limited, for the last 27 years, will be retiring on March 31. He will be succeeded by Mr. P. H. Wyke Smith, who is at present chief engineer of East Midland Motor Services, Limited. Mr. Wyke Smith has previously served with Birmingham and Midland Motor Omnibus Co., Limited, and as assistant engineer with the Western Welsh Omnibus Co., Limited.

Central Transport Consultative Committee

THE third term of office of the Central Transport Consultative Committee for Great Britain having expired, the Minister of Transport has, as already announced, appointed Sir Ronald Thornbury Garrett to be its new chairman. The following will be members for a period until December 31, 1960:

Representing agriculture: Messrs J. L. Brighton and D. Goodfellow.
Representing commerce and industry: Messrs. S. C. Rowell, D. H. Joyce, C. S. Garland, E. G. Whitaker and R. H. E. Thomas.
Representing shipping: Mr. I. Hooper.
Representing labour: Messrs. H. Collison and G. H. Lowthian.
Representing local authorities: Majors J. R. H. Harley and C. E. Pym, Alderman Sir James Collins, Councillors Major W. H. Powell, and J. Bennett.
Representing the British Transport Commission: Lord Rusholme and Mr. M. A. Cameron.
The secretary remains Mr. J. C. Chambers.

Among the new members Mr. Joyce is supplies and transport manager for Shell-Mex and B.P., Limited, chairman of the Association of British Chambers of Commerce Transport Committee and vice-chairman of the Traders Co-ordinating Committee on Transport. Mr. Garland is president of the National Union of Manufacturers and Mr. Whitaker is transport adviser to Unilever, Limited, a member of the transport users' policy committee of the Federation of British Industries and deputy chairman of the Traders Co-ordinating Committee on Transport.

* * *

Mr. R. Tildesley, M.I.Loco.E., M.Inst.T., has been appointed assistant divisional traffic manager, London, London Midland Region, B.R. He was educated at Stand Grammar School, Whitefield, Manchester, and joined the L.M.S.R. in 1929 as a premium apprentice in the chief mechanical engineer's department at Horwich. Five years later, he transferred to the motive power superintendent's department and after further experience at various depots was appointed head office inspector at Euston H.Q. in 1937. Mr. Tildesley became assistant district locomotive superintendent, Bescot, in 1939 and returned to Euston in 1946 as an assistant in the motive power department at H.Q. He was made district motive power superintendent, Bletchley, in 1950, at Rugby in 1952 and at Willesden, his last appointment, in 1955.

Mr. R. Tildesley

* * *

Mr. E. F. Kirby has been appointed service manager of Smiths Motor Accessories, Limited, Cricklewood.

* * *

Mr. R. A. Dyson, previously deputy chairman of the British Wagon Co., Limited, has succeeded Mr. W. H. Copley as chairman.

* * *

Mr. R. E. Dunhill, who has been chief engineer of the Lincolnshire Road Car Co., Limited, since 1943, will be retiring on March 31. Mr. Dunhill started as rolling stock inspector of United Automobile Services, Limited, in 1927 and held consecutively the posts of chief engineer of East Midland Motor Services and Southdown Motor Services and area engineer of Eastern National.

* * *

We record with regret the death of Mr. J. P. A. Meldrum, sales director of Metropolitan-Vickers Electrical Co., Limited, and earlier sales manager of the switchgear department. In 1953 he became manager, home sales, and two years later was elected to the board of the company. In January last year he relinquished home sales duties to take up the responsibilities of sales director.

* * *

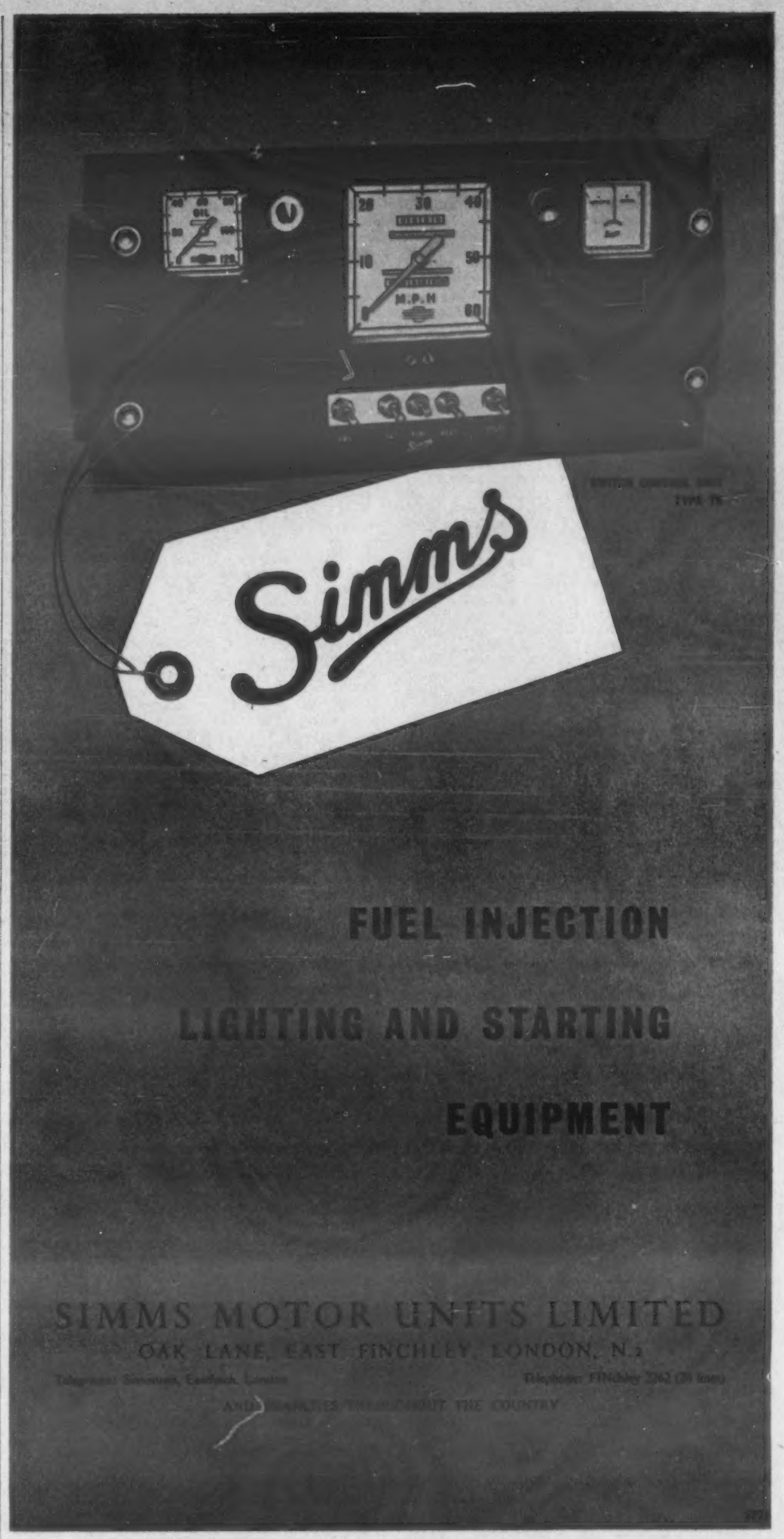
Mr. F. H. Kidd, M.I.Mech.E., who had latterly held an executive position with Suez Contractors (Vehicles), Limited, and before that was divisional engineer, Western Division, B.R.S., has been appointed engineer of Rhodesia United Transport, Limited, with its associated bus and road haulage companies. Before going to B.R.S., Mr. Kidd was with the Western Welsh and Western and Southern National bus companies.

Mr. A. E. Marriott, district goods manager (London City) and Mr. E. O. Lloyd, district goods manager (London Suburban) of the Eastern Region retired on December 31. At a farewell lunch given by officers of the commercial manager's department Mr. F. G. Crabb, commercial officer at E.R. headquarters, presented them with cheques

Following the acquisition of the Fletcher Miller group by C. C. Wakefield and Co., Limited, Mr. S. R. Miller, chairman of Fletcher Miller, Limited, joins the board of C. C. Wakefield.

* * *

A Royal Aero Club silver medal has been awarded to Captain E. E. Fresson for 40 years of flying during which he was a pioneer of Scottish flying and ambulance services and was responsible for saving many lives by his ambulance flights between the Scottish islands and the mainland. He was the founder of Highland Airways which was merged in Scottish Airways and that undertaking in turn was taken over by British European Airways. The tenth award of the Geoffrey de Havilland Trophy is to John Cunningham for his flight from London to Khartoum in a Comet at an average speed of 523 m.p.h. on October 16, 1957. Mr. Cunningham was the first recipient of the trophy in 1948.



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Write, Director of Recruitment, Colonial Office, S.W.1, stating age, qualifications and experience. Quote BCD 173/052.

CLASSIFIED ADVERTISEMENTS

SITUATIONS VACANT

GLOUCESTER RAILWAY CARRIAGE and WAGON COMPANY LIMITED requires Designer with knowledge of heavy transmissions for road or rail vehicles. Permanent Appointment.
Apply **Chief Designer**

TRAFFIC MANAGER. Midland Silicones, Limited, chemical manufacturers, require a Traffic Manager at their factory at Barry, Glamorgan. Duties involve control of the traffic department arranging the movement of goods for home and overseas by road, rail and sea, together with responsibility for all documentation and traffic accounts. The company continues to expand and prospects are excellent. Candidates should be aged 25 to 35. Experience of traffic procedure preferably in industry is essential. A graduate or student of the Institute of Transport preferred. The post carries a good salary and a non-contributory pension scheme is in operation.—Apply to Staff Officer, Ref. No. 419, Albright and Wilson (MFG), Limited, P.O. Box 3, Oldbury, Birmingham.

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OFFICERS with experience in transport and movement are required for service with Royal Engineers, Army Emergency Reserve, Transportation and Movement Control units. Fifteen days training annually. For details write to HQ AER Longmore, Lisa, Hants

IMPORTANT CONTRACTS

More Diesels Ordered

THE placing this week of an order by the British Transport Commission with British Railways Swindon works for 30 main-line diesel-hydraulic locomotives leaves only 34 still to be ordered to complete the replacement of 200 steam locomotives by 130 diesel units which are required for the dieselisation of all Western Region services west of Newton Abbot and for many of the through services between Paddington, Bristol and the West of England. The present order is for 2,000-h.p. locomotives for heavy passenger and freight services. They will be Type IV in the B.R. diesel classification and will be numbered D803-D832. Contracts have been placed by the Western Region with Brush Traction, Limited, for the supply of the Maybach diesel engines, with J. Stone and Co. (Deptford), Limited, for the supply of Mékydro transmissions and with British Brown Boveri, Limited, for the supply of electric control equipments.

Modernisation Contracts

Under newly placed British Railways modernisation contracts, Automatic Telephone and Electric Co., Limited, is to supply supervisory control equipment for the remote control of switch gear on the Manchester—Crewe electrification, and Standard Telephone and Cables, Limited, will provide similar equipment on the Colchester—Clacton branch electrification.

Decca Navigator for New York

Bendix Aviation Corporation, American licensee of the Decca Navigator Co., Limited, has received an order for the installation and operation of a Decca Navigator chain in the New York area. The contract has been placed by the Air Modernisation Board and the Decca system is to be evaluated by New York Airways, which operates helicopters only and whose machines will carry the Decca equipment.

Capital Orders Convair 880

An unusual financial agreement between the General Dynamic Corporation, which builds Convair aircraft, and Capital Airlines has led to the order by Capital of 15 four-jet Convair 880 air liners. The General Dynamics Corporation will grant a credit of about £38,750,000 to Capital Airlines, of which over £17,000,000 will be used to refinance the operator's obligation to Vickers-Armstrongs Aircraft for its fleet of 60 Viscounts.

Waterways Contracts

British Transport Waterways has placed contracts with Howard and Dennis, Limited, Bedford, for three weed-cutting launches for use on the Grand Union Canal and Lee Navigation, and with Priestman Bros., Limited, Hull, for two Cub excavators for use on the Shropshire Union Canal. Direct labour will be used for bank protection work at Nantwich and Wheaton Aston, on the Shropshire Union Canal, and between Southall and Hayes on the Grand Union Canal.

Commonwealth Bogies

An order for 278 four-wheel Commonwealth one-piece cast-steel bogie frames, valued at about £750,000, has been placed by Metropolitan-Vickers Electrical Co., Limited, with English Steel Castings Corporation, Limited, one of the English Steel Corporation group of companies. The bogie frames are for 135 electric locomotives for South African Railways, for which traction motors and auxiliary equipment will be made at the Sheffield works of Metropolitan-Vickers Electrical Company.

Contract Placed for Pantographs

The British Transport Commission has placed a contract with J. Stone and Co. (Deptford), Limited, for 500 Stone-Faiveley pantographs to equip the electric multiple-unit trains and locomotives needed for various British Railways electrification programmes. The Stone-Faiveley pantographs are capable of collecting high-voltage alternating current at high speed from a light overhead wire, and of maintaining constant performance under all weather conditions. They are based upon an advanced and proved French design modified to suit British conditions. The apparatus has one elevating arm instead of two as hitherto used, thus reducing weight and inertia.

G.E.C. Equipment for Floating Crane

The General Electric Co., Limited, has received a contract for the electric power equipment of what is believed to be the first floating crane to use a common diesel-electric plant both for propulsion and for crane operations. This 60-ton twin-screw floating crane is being supplied by Lobnitz and Co., Limited, to the Mersey Docks and Harbour Board. Two engine-generator sets will be installed, each consisting of a Ruston and Hornsby 12YL supercharged engine driving a 330-kW propulsion generator and a 300-kW auxiliary generator in tandem. Each main generator will supply independently a 400-h.p. 120-r.p.m. propulsion motor direct-coupled to one propeller. To assist manoeuvring, a third screw in an athwartships tunnel will be driven through gearing by a 210-h.p. motor supplied from either auxiliary generator. A Ward-Leonard set, supplied from the auxiliary busbars, will provide power for the hoist, auxiliary hoist and derricking of the crane, while power for the slewing and travelling ballast motors will be taken direct from the auxiliary bars.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

February 7—Union of South Africa.—Transvaal Provincial Administration for two light-type AMBULANCES and two heavy-type AMBULANCES. Tenders to the Chairman, Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria. (ESB/1616/58.)

February 7—Union of South Africa.—Durban Corporation for eight extra-heavy-duty 4 cu. yd. diesel TIPPING LORRIES, one PLATFORM LORRY for 10,000-lb. payload, two PLATFORM LORRIES for 6,000-lb. payload and one VAN for 3,000-lb payload. Tenders to the Town Clerk, City Hall, West Street, Durban.

February 14—India.—Directorate-General of Supplies and Disposals for several hundred railway WHEELS and AXLES. Documents and drawings available on loan from Export Services Branch, B.o.T. (ESB/1664/58.)

February 14—Union of South Africa.—South African Railways for 1,960,000 CAST-IRON CHAIRS. Photocopies of tender documents from Export Services Branch, B.o.T., price 11s. (ESB/1449/58.)

February 19—Formosa.—International Co-operation Administration for 31 35-ton steel GONDOLA-TYPE WAGONS and 30 15-ton GONDOLA-TYPE WAGONS. Photocopies of tender documents from Export Services Branch, B.o.T., price 17s. (ESB/1651/58/ICA.)

March 4—New Zealand.—Auckland Harbour Board for 12 TRACTORS for towing trailers or pushing rail wagons, with a drawbar pull of 2,500-3,000 lb., and two HEAVY TRACTORS for general work and towing or pushing quay cranes or hoppers, with a drawbar pull of 10,000-12,000 lb. Tenders to the offices of the Auckland Harbour Board, Quay Street, Auckland C.1. (ESB/31709/57.)

SHIPPING and SHIPBUILDING

Free Port for St. Lawrence?

ESTABLISHMENT of a free port at Mortier Bay, Newfoundland, for the transhipment of goods between North America and the rest of the world were referred to at an annual conference of representatives of the Great Lakes shipping industry. American capital is behind plans to clear a huge area and build warehouses to store goods moving in each direction. The transhipment plan would use Chicago, Milwaukee or Duluth (at the expense of Montreal, Halifax and St. John) as a western terminus and would operate lake carriers and shipping on the St. Lawrence Seaway, to carry package goods to Mortier Bay, to be stored until a cargo ship picked them up for delivery. The lake ships would return carrying foreign cargoes for the inland ports. Mortier Bay is ice and fog free.

Maiden Visit to London

THE Cunard liner *Saxonia* arrived at London from New York via Halifax, N.S. and Havre on Friday, last week, her first visit to the capital. She and her sister *Ivernia* will be making eight sailings from King George V Dock and Tilbury.

East Pakistan Yard

A SMALL yard at Khulna in East Pakistan has now been completed. The Pakistan Industrial Development Corporation started work on the project in 1954 and by June last year the yard had come into partial operation, taking chiefly repair work. The entire project is now ready to cope with all requirements.

B.T.C. Scottish Port Proposal

LOCAL shipping and commercial interests are supporting Bo'ness Town Council in its fight against the proposed closure of Bo'ness Dock. The Town Council sponsored a meeting on January 28, when it invited the Firth of Forth Shipowners' Association along with other bodies to attend and support this move. This follows the proposals advanced earlier by the British Transport Commission that Bo'ness Dock should be closed because of decreased traffic in recent years.

Duke Sees Shipyard Machinery

DURING a recent visit to the Wallsend shipyard of Swan Hunter and Wigham Richardson, Limited, the Duke of Edinburgh saw demonstrations of some of the new machinery which has been designed to speed up building. The machines included a welding gantry with a 60-ft. span used for the automatic butt welding of the edges of bulkhead plates, the first of its kind to go into service in Great Britain, and another gantry installation designed to make simultaneous fillet welds on each side of bulkhead stiffeners. The second machine has the unusually high utilisation factor of up to 80 per cent. Both machines were designed and manufactured by Quasi-Arc, Limited.

Colombo Port Nationalisation Expected

IT now appears that the port of Colombo may be brought under direct state control, rather than be re-formed into a corporation. The Ceylon Prime Minister, Mr. Bandaranaike, told a deputation that complete state control was being considered by the Government; most of his ministers were in favour of nationalising the port. The process of nationalisation is expected to be hastened by the refusal of landing companies to accept the earlier Government proposal to set up a corporation to run the port with 25 per cent of its shares open to purchase by existing private operators. During the past year the port has remained congested for long periods as a result of recurring strikes. Consequent delays have caused several owners to by-pass Colombo in favour of Indian ports.

Bill of Suez Clearance

IT was stated this week in the House of Commons by Commander Allan Noble, Minister of State, that the total cost of clearing the Suez Canal was approximately £3,401,000. This included the costs incurred by the Anglo-French salvage fleets during the period in which it was solely responsible for clearance work and also the costs of its services when it formed part of the United Nations fleet after the United Nations took over responsibility on December 22, 1956. The costs of the United Nations fleet were to be met from the proceeds of a surcharge of 3 per cent, which was to be levied on the dues of all ships passing through the Suez Canal, while those incurred by the United Kingdom before December 22 ranked as a governmental claim against Egypt.

HAULAGE ON B.R.S. SCALE

(*Continued from page 6*)

were no difficulties inherent in the size of the undertaking as a whole which could not be overcome by a good organisation with sound communications.

Four Conclusions

From these considerations, it could be concluded, firstly, that if so many industries had successfully developed large-scale units there must surely arise a prima facie case for a similar development in road haulage. If it was right for other industries, was there any justification for assuming that road haulage was any different? Secondly, large manufacturing and trading units needed to be matched by large scale in road haulage. Thirdly, there were no difficulties inherent in size which could not be overcome by a good organisation with a well-designed structure and sound communications.

Fourthly, the personal service of which so much was made in road haulage could be preserved if the organisation was right and decentralisation was of a kind that put the man who was in touch with the customer in command of the resources necessary to carry out the whole transit operation and gave him an adequate degree of delegation and local responsibility. The mode of transport (railways) or the nature of the traffic (small consignments) might render personal service in this complete sense an impossibility—but not size, if the organisation was right.

In road haulage today we had a mixed economy in which a number of small undertakings were in competition with a large undertaking. The user—who naturally liked to have the best of both worlds—no doubt felt that the small operators would keep the large undertaking on its toes and provide a built-in check on the reasonableness of charges. The balance sheet provided the ultimate test by which the large haulage undertaking would be judged against its smaller rivals.

The superb design and performance of the Leyland 7-8 ton 'Comet' has misled some people into thinking that it must cost the earth. In actual fact, not only is the price fiercely competitive, but it is the cheapest *quality* truck on the market.

At first sight, it seems amazing that trucks incorporating such outstanding features as the famous Leyland 100 h.p. diesel (last word in low fuel consumption), heavy-duty 5-speed gearbox and 2-speed back axle are so favourably priced that they sell in record numbers throughout the world.

The reason isn't far to seek.

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That is why they can sell the best trucks in the world at such astonishingly low prices.

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